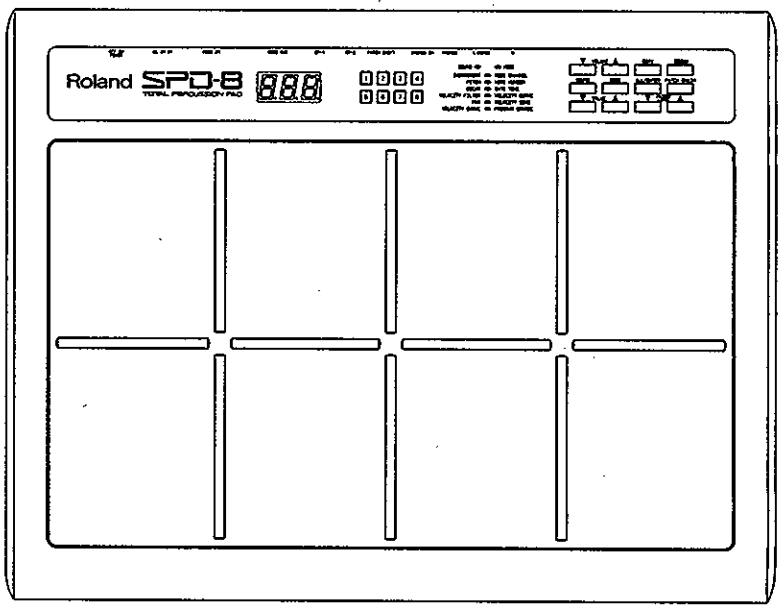
Roland

TOTAL PERCUSSION PAD

SPD-8

OWNER'S MANUAL



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Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND TOTAL PERCUSSION PAD SPD-8

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a rasidential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures.

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio — TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

For Canada

CLASS B **NOTICE**

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B **AVIS**

Cet appareil numerique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

SPD-8

TOTAL PERCUSSION PAD

Owner's Manual

Thank you and congratulations on your purchase of the SPD-8 "Total Percussion Pad". The SPD-8 is a Pad Controller that is equipped with its own internal sound source. Moreover, it allows you to trigger other external MIDI devices as well. In addition, you can conveniently input an audio signal, such as from a tape recorder, so you hear what you play on the pads, mixed with the incoming signal. This allows you to create ensemble-like performances.
In order to fully understand the unit's wide range of superior functions, and assure continuing satisfaction, please read this manual in its entirety.

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Features of the SPD - 8

- Equipped with an internal sound source providing 39 different high - quality sounds, with 16 - bit dynamic range.

- Each of the percussion sounds (sound sources) can be edited by changing the Sound Parameters (Pitch, Decay, Pan, Velocity Filter). By using the Velocity Filter for example, you obtain control over the timbre which reflects the strength with which a Pad is struck.

- The unit allows you to store up to 32 Patches, each of which can contain settings for all 8 Pads. This conveniently allows you to prepare a variety of Patches, covering the setups needed for each of the songs you will perform. All you need do is change Patches to instantly obtain the required collection of Pad settings.

- The SPD - 8 also functions as a MIDI controller. This way, whenever a Pad is struck, you can trigger internal sounds and external sounds (from an external MIDI sound module) simultaneously.

- The SPD - 8 can also be used as a MIDI sound source. Data, such as that from a sequencer, can be used to trigger the SPD - 8's internal sounds.

- The "Patch Chain" function allows you to create a sequence of Patches (from the 32 available), which can then be recalled in that order during performance.

- STEREO IN jacks allow you to input sound, such as from a cassette tape player, which is then mixed with the unit's internally produced sounds when output. This provides you with an effective way to enjoy playing the Pads in time with other music.

- With a pedal switch (such as the DP - 2:optional) connected to the unit's EP - 1 jack, Pad sounds can be sustained. The pedal can also be used to trigger sounds. Additionally, using the EP - 2 jack, two sounds can be assigned to each of the Pads, and the pedal can be used to switch between them.

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IMPORTANT NOTES

In addition to the items listed under Safety Precautions on page 2, please read and adhere to the following:

[Power Supply]

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.
- The power supply required for this unit is shown on its nameplate. Ensure that the line voltage of your installation meets this requirement.
- Avoid damaging the power cord; do not step on it, place heavy objects on it etc.
- When disconnecting the AC adaptor from the outlet, grasp the plug itself; never pull on the cord.
- If the unit is to remain unused for a long period of time, unplug the power cord.

[Placement]

- Do not subject the unit to temperature extremes (eg. direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas or areas that are subject to high vibration levels.
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.
- Do not expose this unit to temperature extremes (eg. direct sunlight in an enclosed vehicle can deform or discolor the unit) or install it near devices that radiate heat.

[Maintenance]

- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

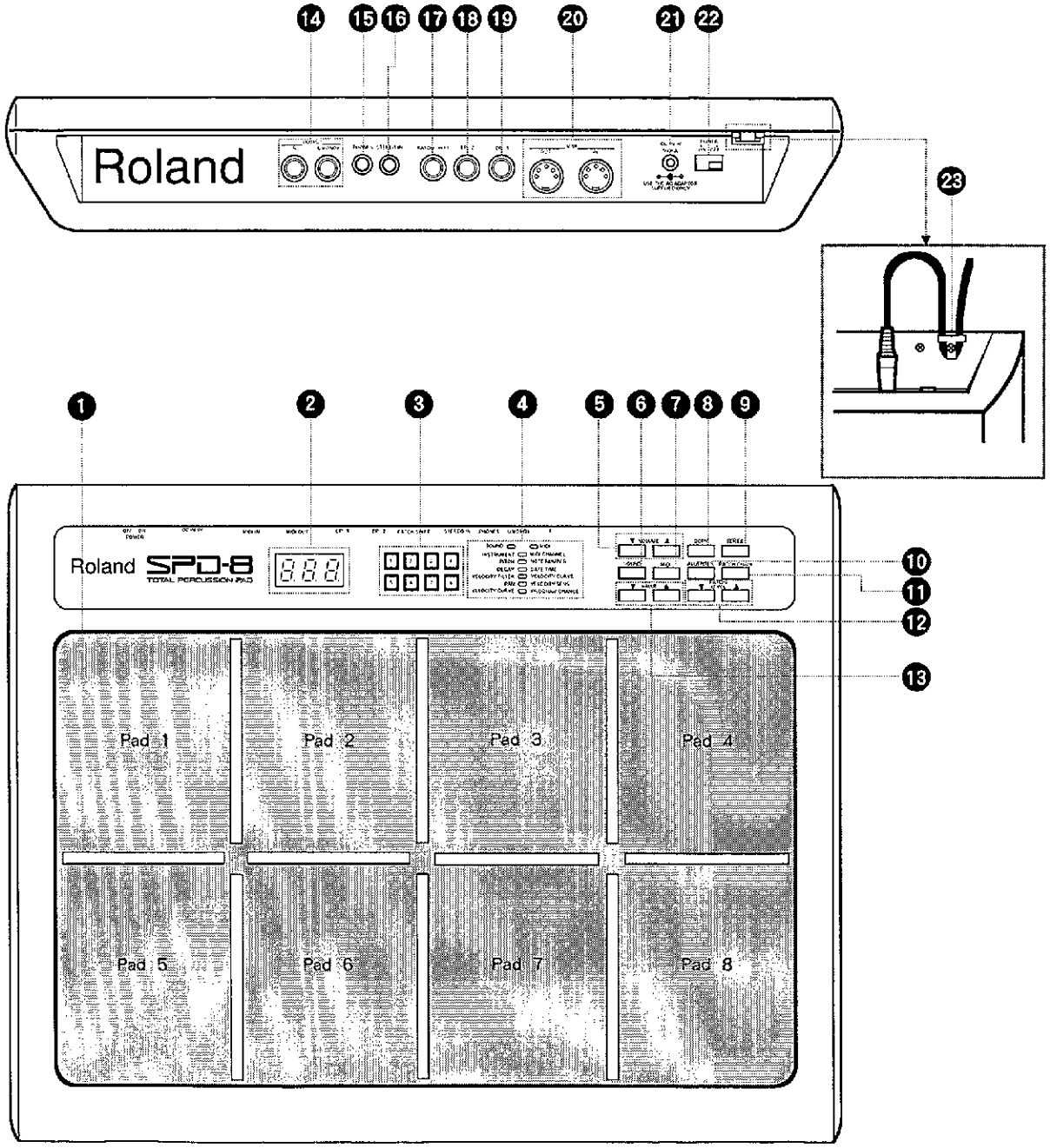
[Memory Backup]

- The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more. However, to avoid the unexpected loss of memory data, it is strongly recommended that you change the battery every 5 years.
  Please be aware that the actual life of the battery will depend on the physical environment (especially temperature) in which the unit is used. When it is time to change the battery, consult with qualified service personnel.
- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored in another MIDI device (eg. a sequencer) by Bulk Dump, or written down on paper. During repairs, due care is taken to avoid the loss of data. However, in certain cases, (such as when circuitry related to memory itself is out of order) we regret that it may be impossible to restore the data.

[Additional Precautions]

- Protect the unit from strong impact.
- Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.
- Never strike or apply strong pressure to the display.
- Do not remove the screws on the unit's bottom panel. If you play the pads while the screws are missing, or are not fastened securely, malfunction could result.
- Should a malfunction occur (or if you suspect there is a problem) discontinue use immediately. Contact qualified service personnel as soon as possible.

PANEL DESCRIPTIONS



1 PADS 1 - 8
The Pads are hit to play the unit. Used also while in the Edit mode to specify the Pad which is to be edited.

2 Patch Display
Provides display of Patch Numbers and Parameter Values.

3 Pad Indicators
The indicator corresponding to a Pad that is being sounded, or one that is being edited, will light.

4 Parameter Indicators
The indicator corresponding to a Parameter being edited will light.

5 VOLUME Buttons
Provide adjustment of the overall volume output from the SPD-8, for sound originating in its internal sound source. (see P.13)

6 SOUND Button
Used to make selection among Sound parameters. (see P.18)

7 MIDI Button
Used to make selection of a MIDI parameter. (see P.29)

8 COPY Button
Used to copy the data from one Patch to another. (see P.49)

9 EDIT Button
Used to switch between the Edit and Play modes. (see P.17)

10 ALL/ENTER Button
Used when setting identical values to all Pads, to confirm execution of Copy, and when storing settings for Patch Chain.

11 PATCH CHAIN Button
Used to setup a Patch Chain, or to play a Patch Chain. (see P.51)

12 PATCH/LEVEL Buttons
Used to change Patch numbers, or to adjust the volume for each of the Pads. (see P.14, 23)

13 VALUE Buttons
Used to make changes in the values of parameters.

14 Stereo Out Jacks (L (MONO), R)
These jacks provide stereo output. When a monaural signal is desired, connect to the L (MONO) jack. (see P.12)

15 Headphones Jack (Stereo mini jack)
Accepts connection of headphones. Sound will continue to be output from the Stereo Out even while headphones are connected. (see P.12)

16 Stereo In Jack (Stereo mini jack)
Audio signals from a cassette tape recorder or other device can be input here, and such signals will be mixed with the sound produced by the internal sound source. Output of the resulting mix is obtained from the Stereo Out and Headphones jacks. (see P.12)

17 PATCH SHIFT Jack
Accepts connection of a pedal switch (DP-2), which can then be used to change Patches. (see P.14)

18 External Pedal Jack 2
When connected here, a pedal switch (DP-2) allows you to have 2 sounds assigned for each Pad and to switch between them during performance. (see P.42)

19 External Pedal Jack 1
After a pedal switch (DP-2) has been connected here, it can be used to trigger the sounding of pads, or for holding sounds played on the Pads. (see P.42)

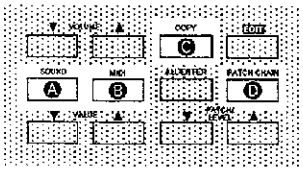
20 MIDI Connectors (IN, OUT)
These connectors accept connection of other MIDI devices. (see P.12)

21 AC Adaptor Jack
The supplied AC Adaptor is connected here.

22 Power Switch
Turns power On or Off.

23 Cord Hook
Loop the cord around this hook to prevent accidental disconnection.

* Whenever [EDIT] is held down while power is turned on, the buttons indicated below can then be used for certain special functions :



Ⓐ Sets the Basic Channel. (see P.36)

Ⓑ Provides for transfer of Patch data using Exclusive messages. (see P.39)

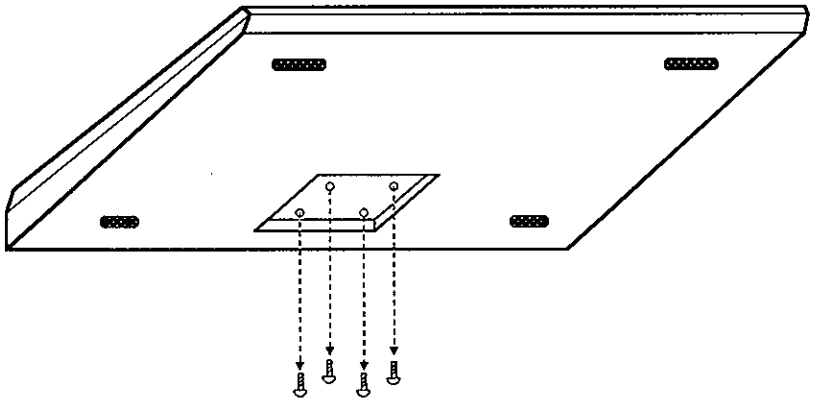
Ⓒ Restores the unit to the Factory Preset Patch settings. (see P.53)

Ⓓ Changes the method of display for Patch Numbers/Program Numbers. (see P.15)

Attaching the Stand

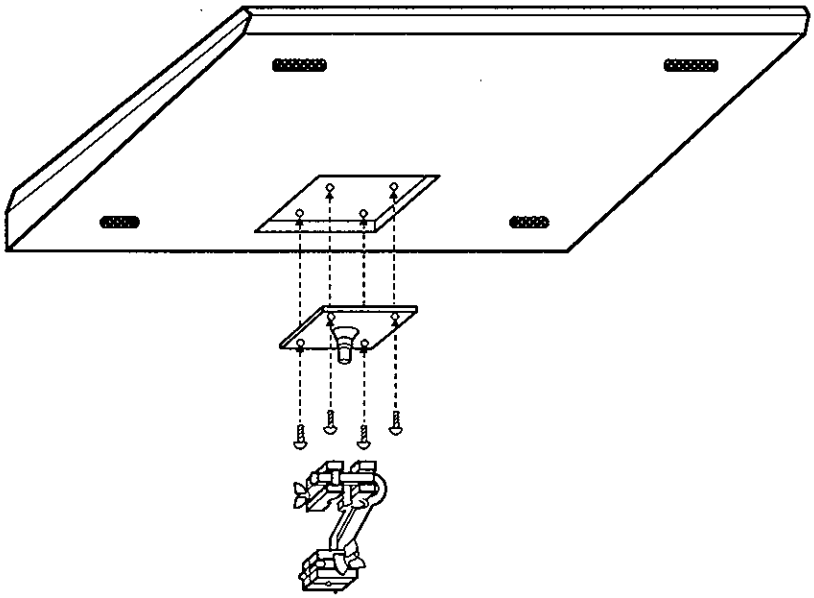
When wishing to install the SPD - 8 on a drum (or similar) stand, you should employ the optionally available All - Purpose Clamp Set (APC - 33:optional). The unit is attached as follows:

① Remove the 4 screws from the bottom of the SPD - 8.



② Use the same 4 screws that were removed in ① to attach the Stand Holder (supplied with the All - Purpose Clamp Set, APC - 33), to the bottom of the SPD - 8.

* The screws supplied with the APC - 33 will not be needed.



MEMO

Section I

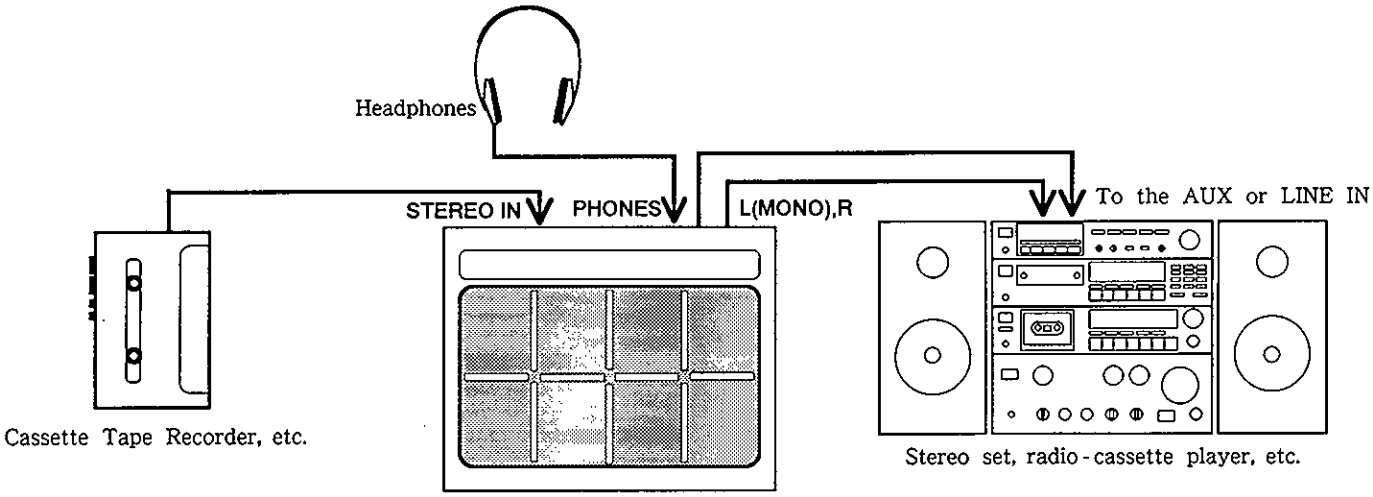
《GETTING STARTED》

1 Preparing for Play

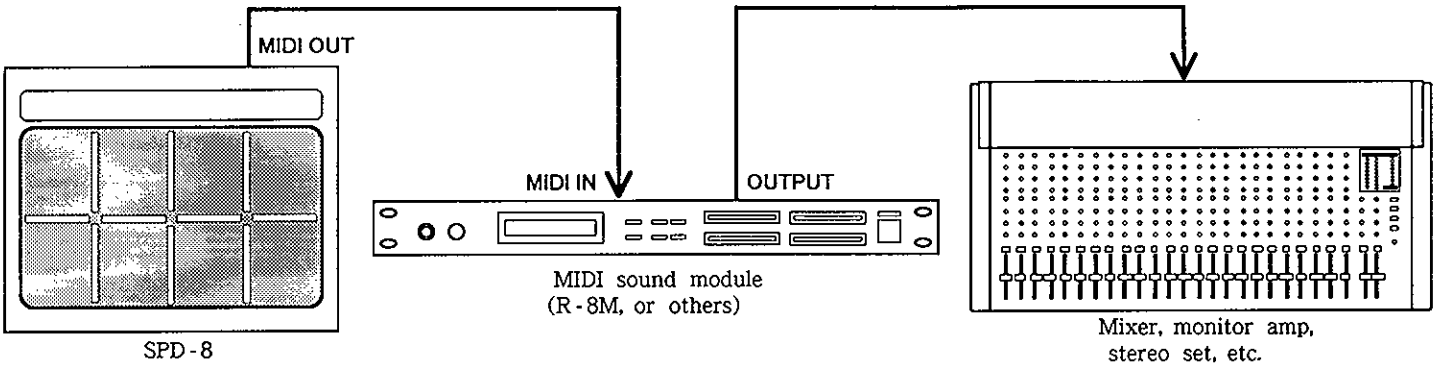
1. Making the Connections

● To play the SPD-8's internal sound source.

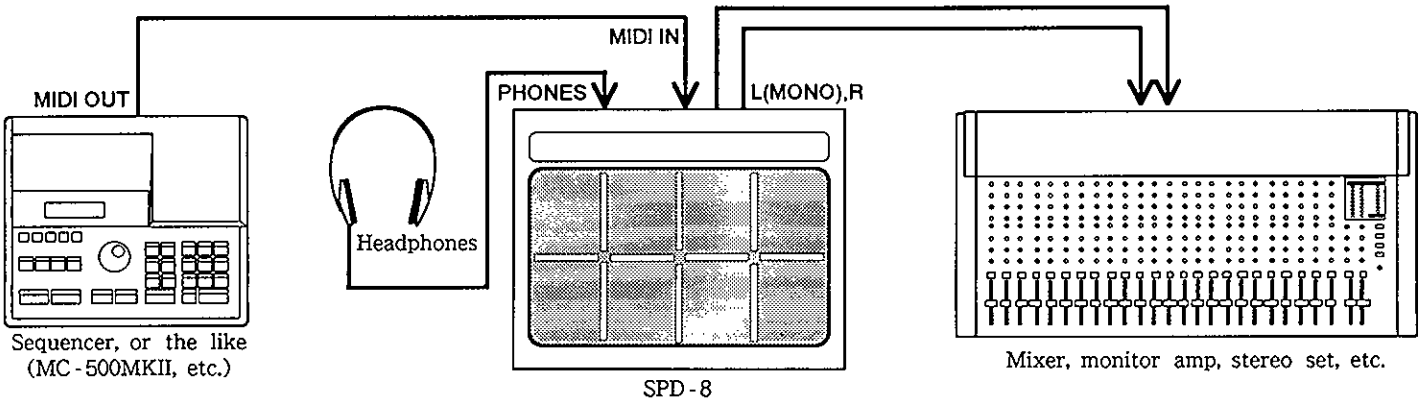
Since the SPD-8 is equipped with mixing circuitry, its internal sounds can be played and mixed with the output of a cassette tape recorder (for example). Output is obtained from both the Headphones and Stereo Out jacks.



● To sound other MIDI sound modules



● Using the unit as a MIDI sound module



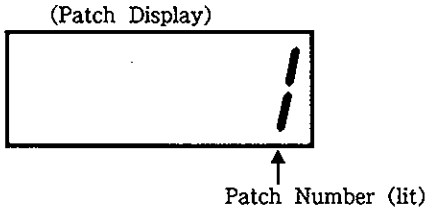
2. Playing

You should now be ready to try playing the SPD - 8 and listen to the many different internal sounds.

a. Turn On the Power

① After confirming that any external devices have been connected properly, turn on the power switch on the unit's rear panel.

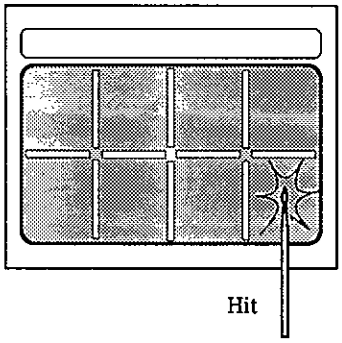
The display should then appear as shown below. This condition is referred to as the "Play Mode."



② Now, turn on the power on all external devices that you have connected. The power on an amplifier should be turned on last.

b. Playing the Pads

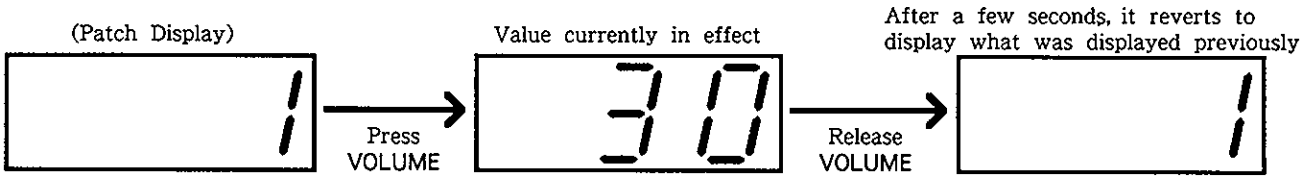
With each strike of a pad you will hear the sound that has been assigned to that particular pad. The volume obtained will vary, depending on the force with which the pads are hit.



[Adjusting the volume]

The overall volume (0 – 30), for all sounds produced by the internal sound source (from both the Stereo Out and Headphones jacks), is adjusted by means of VOLUME [▲][▼].

Whenever you press VOLUME [▲][▼], the current setting will appear briefly in the display.



The higher the value, the higher the volume becomes. At "0" no sound will be heard.

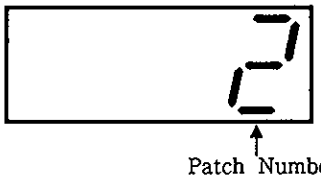
* The volume of the pads can also be adjusted on an individual basis (P.23).
* Volume settings are retained in memory even while power is off.

c. Changing Patches

The SPD - 8 provides you with a number of locations in memory where you can store, as a "Patch", a collection of data containing information on settings for all eight pads (such as those determining the types of sounds used). Data concerning the functions obtained with the EP - 1 and EP - 2 jacks can be stored as well. (P.42)

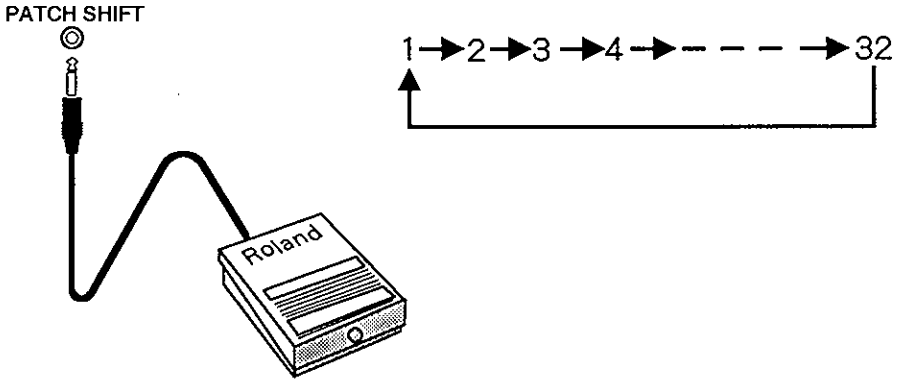
Up to 32 patches can be stored internally. Patch selection is made from the Play Mode, using PATCH/LEVEL [▲][▼].

The Number of the Patch which is currently selected appears in the display.



* For information on the Factory Preset Patches, refer to P.68.

By connecting a Pedal Switch (such as the DP - 2:optional) to the PATCH SHIFT jack, you will then be able to change Patches using your foot. Each time the pedal is depressed, the next higher numbered Patch will be selected, as shown below. If you press and hold the pedal, the Patch numbers will increase continuously.



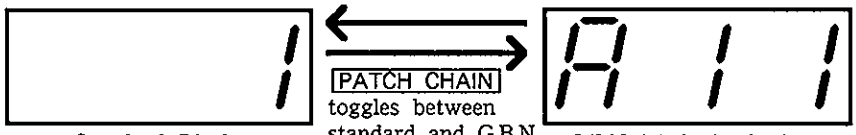
● Altering How Patches Are Displayed

Ordinarily, the Patch numbers are displayed using the numbers 1 through 32. However, if you follow the steps below, you can change the LED to display the numbers as A11 through A48 (the G.B.N. method, i.e., in terms of Group, Bank, Number).

① While holding [EDIT], turn the power switch on.

② Now, if you press [PATCH CHAIN], you can toggle between the two types of indication.

(Patch Display)



Standard Display

G.B.N. Method of Display

Standard	G.B.N. Method	Standard	G.B.N. Method	Standard	G.B.N. Method	Standard	G.B.N. Method
1	A11	9	A21	17	A31	25	A41
2	A12	10	A22	18	A32	26	A42
3	A13	11	A23	19	A33	27	A43
4	A14	12	A24	20	A34	28	A44
5	A15	13	A25	21	A35	29	A45
6	A16	14	A26	22	A36	30	A46
7	A17	15	A27	23	A37	31	A47
8	A18	16	A28	24	A38	32	A48

③ Now, if you turn the power switch off, then back on again, you will be in the Play Mode, and the Patch numbers will be displayed in the manner you have selected.

[2] OVERVIEW OF THE SPD-8

1. Pad Parameters

The SPD - 8 is a percussion pad controller. Using the 8 pads, both the internal sound source, or an external MIDI sound module can be triggered.

The sounds that will be produced by the pads are determined by the Sound Parameters and the MIDI Parameters.

● **Sound Parameters**

The Sound Parameters are used to make settings for the internal sounds. They provide control which determines the sounds that are assigned to the pads, and for altering the percussion sounds that have pad assignments.

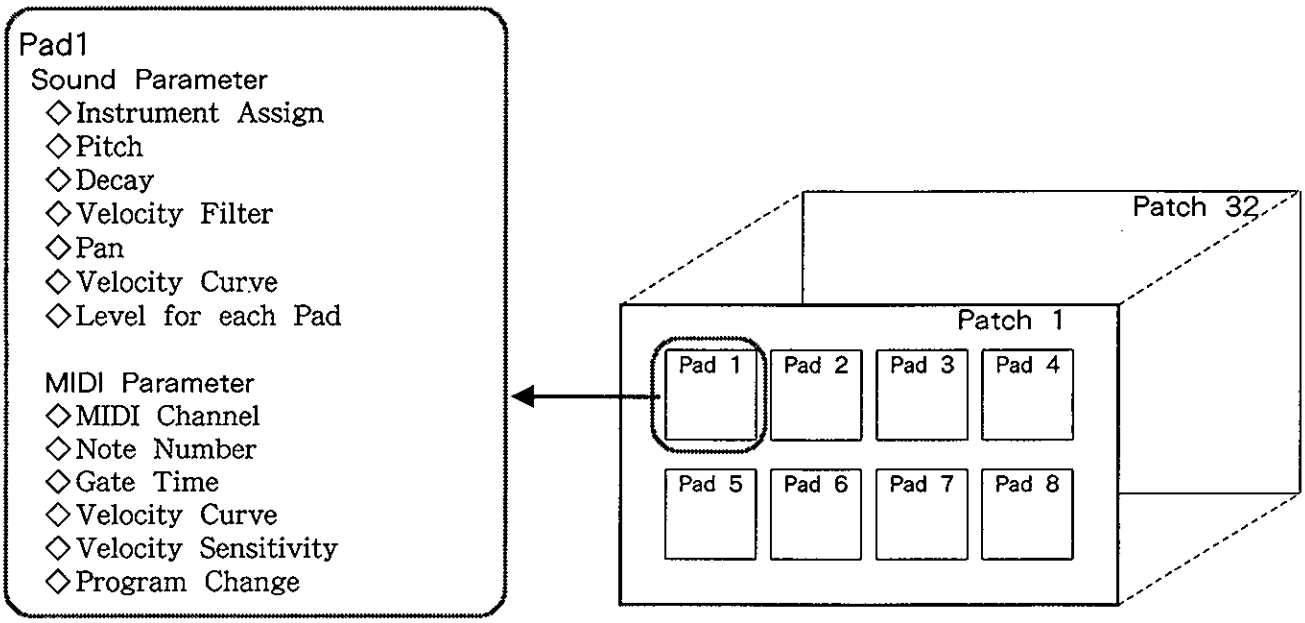
● **MIDI Parameters**

Settings for the MIDI Parameters are made when the SPD - 8 is to be used to trigger an external MIDI sound module.

2. Patch Content

The settings made for all 8 pads can be stored together as a "Patch". The unit is capable of storing 32 different Patches in its internal memory.

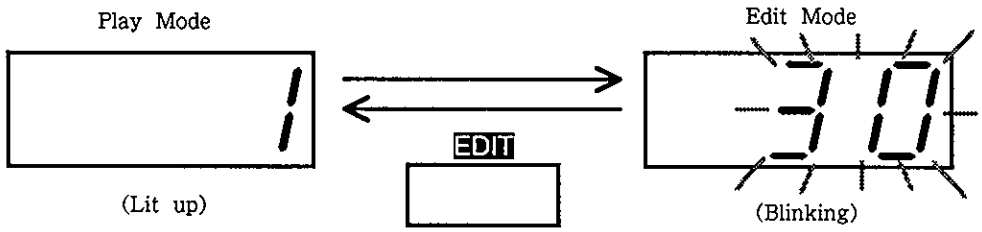
Live performances can be greatly simplified by creating specific Patches beforehand. During a performance it is simply a matter of selecting the desired Patch number to recall the settings for a particular song.



* In a manner identical to that when storing settings for the Pads, the functions of the EP - 1/EP - 2 jacks can also be stored within a Patch. For information on the functions of the EP - 1/EP - 2 jacks, refer to P.42.

3. Changing Modes

Two modes are available on the SPD - 8: the Play Mode and the Edit Mode. Press [EDIT] to switch between the two.



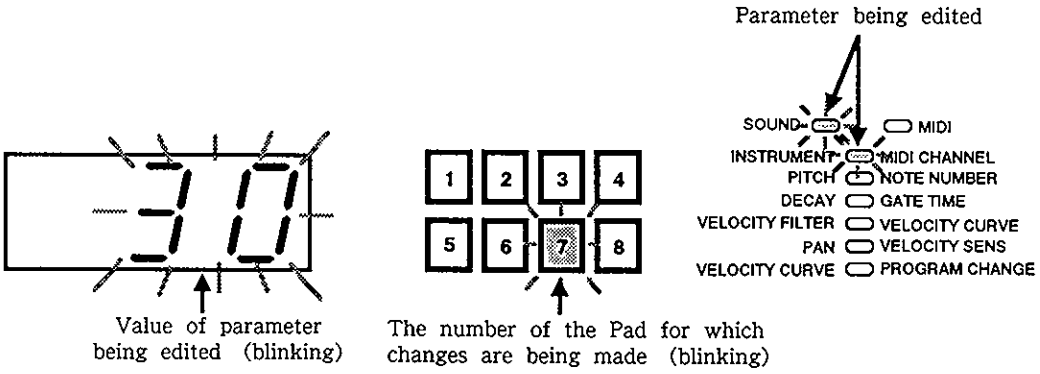
● Play Mode

This mode allows for performing with the unit, by hitting the pads. The sound which is assigned to the particular pad that is hit will be heard. Whenever a pad is hit, the Pad Indicator will light for the duration of the Gate Time, a setting which is made under the MIDI Parameters.

* You must be in the Play Mode in order to select Patches.

● Edit Mode

The Edit Mode is where you make changes in various settings, such as those that affect each of the pads. While in this mode, both the Patch Display as well as the Pad Indicators will be blinking. The editing functions are active for a pad which has its indicator blinking. Use either [SOUND] or [MIDI] to select a parameter, then make the setting changes using VALUE [▼][▲]. When you wish to change the pad to be edited, simply hit the pad which you want to work with, and confirm that its indicator has begun blinking.



[3] CHANGING PADS SOUNDS

To select the percussion sound played by each pad, and to make changes in timbre, the settings for the Sound Parameters are changed.

1. How the Sound Parameters Work

The following parameters are set on an individual pad basis:

● Selection of the percussion sound and filters (Instrument Assign : OFF/1 – 117)

This parameter provides for selection of the percussion sounds (39 kinds) that will be heard when each of the pads is played, and for the type of filter used.

There are three numbers which have been assigned to each percussion sound, used for selection of the filter type.

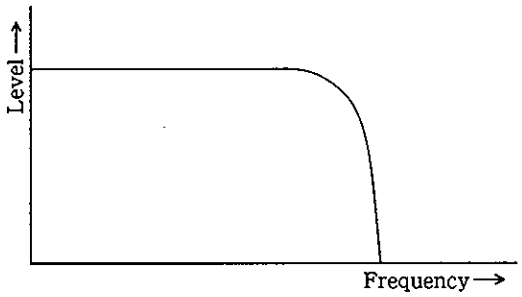
When a filter is used, changes in timbre are obtained which correspond to the force with which the pad is struck. Additionally, using the adjustment made for the Velocity Filter (P.20), you can control the overall amount of change in timbre that is possible.

* For information on the correspondence between the above mentioned numbers and the percussion sounds, refer to the "List of Percussion Sounds" (P.65).
* When you wish to have only an externally connected MIDI sound module produce sound, "Instrument Assign" should be set to "OFF".
* The editing functions are not available for sounds which are not assigned to any of the pads.

The following three filter types are provided:

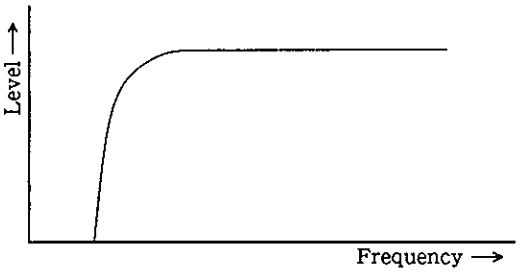
○ Low-pass Filter

Allows the lower frequency components to pass, while cutting out the higher frequencies.



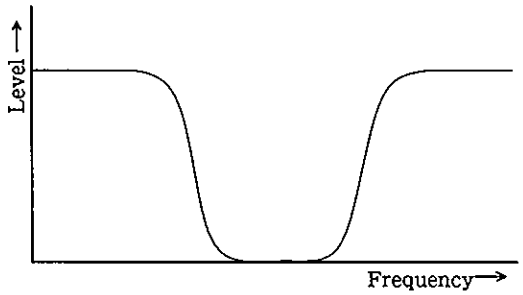
○ High-pass Filter

Allows the higher frequency components to pass, while cutting out the lower frequencies.



○ Combination Filter

This filter cuts out the mid - range frequencies.



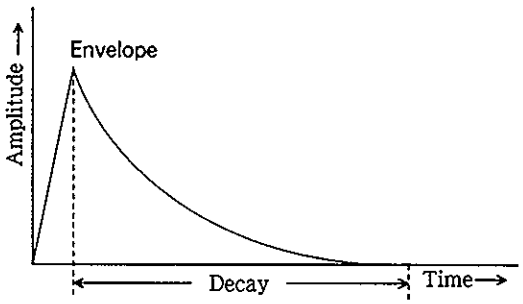
* Should you wish to have no filtering at all used, select either the Low - pass or High - pass filters, then set the Velocity Filter (refer to P.20) to "1".

● Pitch (− 12 to + 12)

Adjusts the pitch of the percussion sound. When the value is increased by 1, the pitch is raised by 1 semitone (100 cents).

● Decay Time (Decay : − 30 to + 30)

Adjusts the decay of the percussion sound. The higher the value is set, the longer it will take for the sound to decay.



● Changes in Timbre (Velocity Filter : 1 to 10)

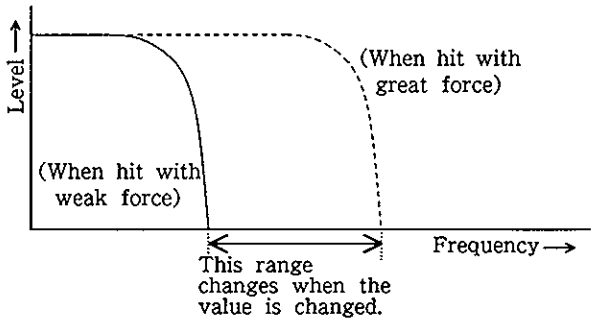
This setting determines the change in timbre that occurs when the force with which a pad is struck is changed. The higher the value is set, the greater will be the change in timbre. It should be set to "1" when no change in the timbre is desired.

Each filter performs as explained in the following.

* Filter selection is made under "Instrument Assign" (P.18).

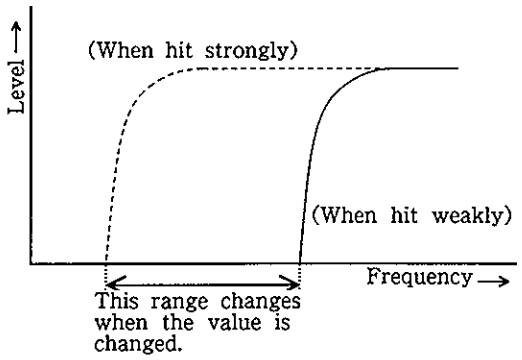
○Low - pass Filter

The greater the playing force, the narrower the range over which the higher frequencies are cut.



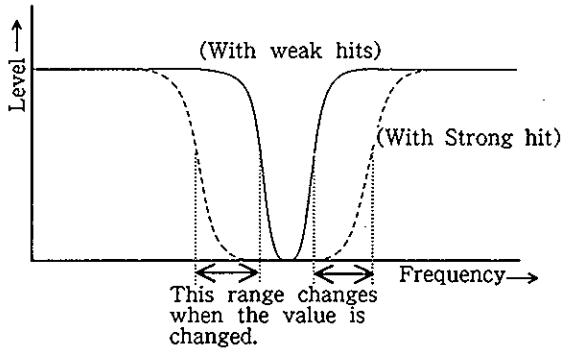
○High - pass Filter

The greater the playing force, the narrower the range over which the lower frequencies are cut.



○Combination Filter

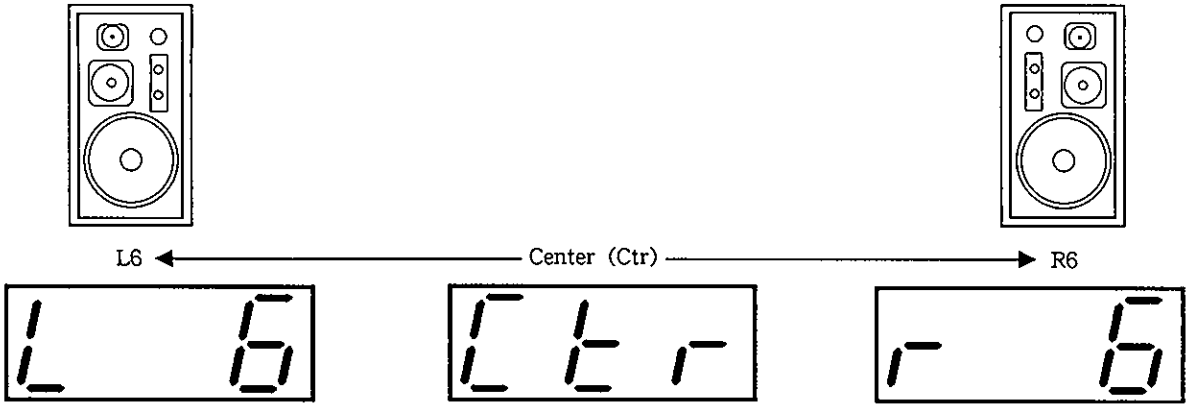
The greater the playing force, the wider the range over which the mid - range frequencies are cut.



* When the Velocity Filter is set to "1", the timbre will be the same regardless of whether the Low - pass or High - pass filters are selected. However, if you use the Combination filter, a slight difference in timbre may be heard.

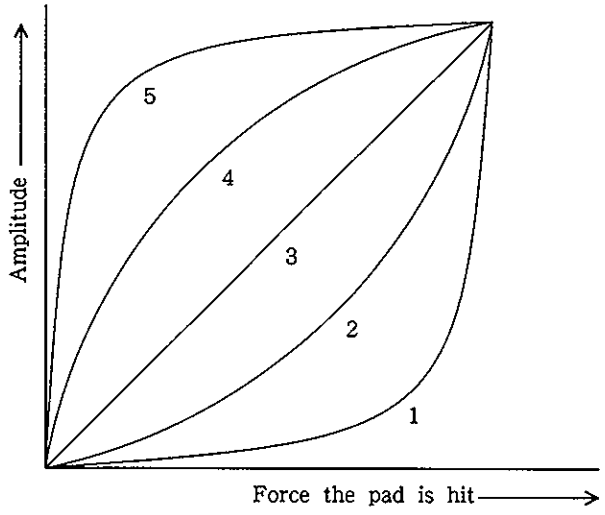
● Orientation of the sound (Pan : L1 – L6/Ctr/R1 – R6)

This setting determines the panning (spatial orientation) of the sound image. The setting (13 available positions) affects signals at both the Stereo Out and Headphones jack.



● Changes in amplitude (Velocity Curve : 1 – 5)

The relationship between amplitude (volume) and playing strength can be changed by selecting one of 5 different Velocity Curves :



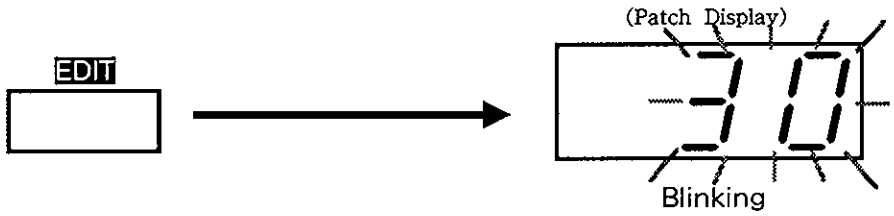
* The manner in which changes in the timbre will be obtained, as the result of a Velocity Filter, will vary depending on the choice made for the Velocity Curve.

2. Settings for the Sound Parameters

① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 to 32) that you wish to edit.

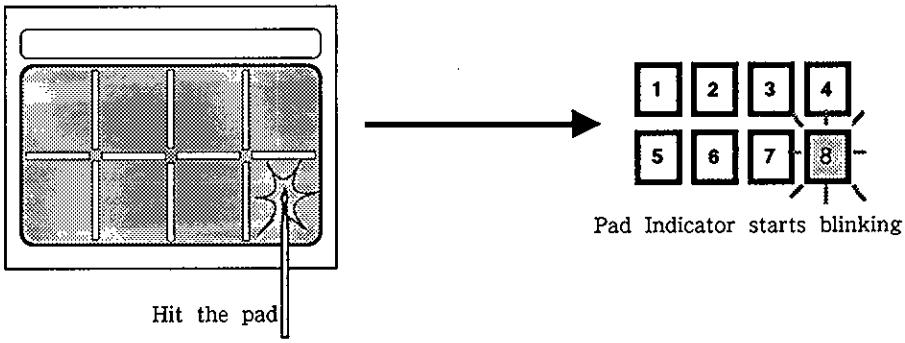
② Press [EDIT] to select the Edit Mode.

The Patch Display will start blinking, indicating that the unit is in the Edit Mode.



③ Strike the Pad for which you wish to make changes.

The Pad Indicator for the Pad which you hit will be blinking.



④ Press [SOUND] as many times as needed until the indicator for the Parameter you wish to edit is lit.

SOUND
INSTRUMENT
PITCH
DECAY
VELOCITY FILTER
PAN
VELOCITY CURVE

⑤ Using VALUE [▼][▲], make the change in the value.

Press [▼] to lower the value, and [▲] to increase it. If you hold down either button, you obtain a continuous change in the value. Additionally, a more rapid change in the value is obtained if you hold down [▲] (or [▼]) while you press [▼] ([▲]).

The result of your editing can be heard by hitting the pad.

⑥ To continue, and edit other parameters, repeat steps ④ and ⑤.

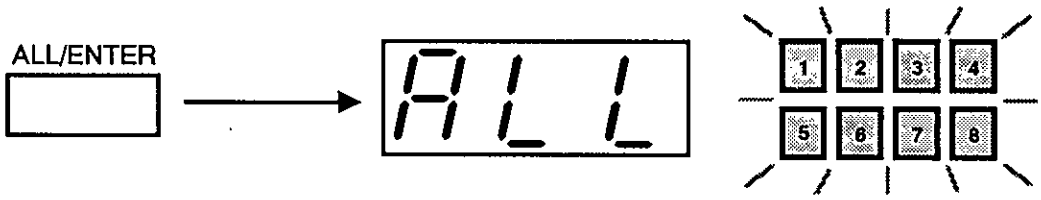
⑦ To edit other pads, repeat steps ③ through ⑥.

⑧ Press [EDIT] to return to the Play Mode.

* The Copy function can be used to copy only the Sound Parameters of one Patch to another Patch location. (see P.49)

● When wishing to have the same parameter values apply to all pads

If, after making value settings (as in ⑤ above), you press [ALL/ENTER], the parameter value that is displayed at that time will be set for all of the pads. At this time, all of the Pad Indicators will light momentarily.



* This feature is convenient in cases where you wish to have the same percussion sound (such as vibraphone) assigned to every pad, and with each at a different pitch, use them to play melodies.

● Individual volume adjustment for Pads

When making settings for any of the Sound Parameters while in the Edit Mode, you can use PATCH/LEVEL[▼][▲] to adjust (1 – 20) the volume for the Pad which is being edited. The higher the value, the greater the volume. Even at a value of "1", sound will be heard.

MEMO

Section II

《GETTING MORE OUT OF THE SPD-8》

1 USING MIDI IN PERFORMANCE

1. ABOUT MIDI

MIDI is an abbreviation for "Musical Instrument Digital Interface." It is an international standard that allows for data (such as that representing the music played, or for changes in sounds used) to be exchanged among various instruments. As long they are MIDI compatible, all devices, regardless of differences in model or manufacturer, can exchange whatever performance data they are equipped to understand.

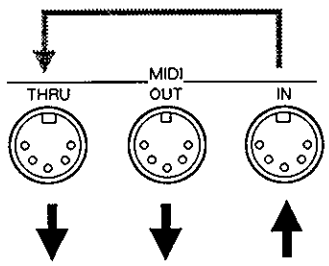
Under the MIDI standard, performance events such as playing on a keyboard, or depressing a pedal are handled as MIDI message.

a. The Exchange of MIDI Message

The basics of how the exchange of MIDI message is carried out is explained in the following.

About MIDI Connectors

In carrying out the exchange of MIDI message, 3 types of connectors (shown below) are used. MIDI cables are connected to these connectors in various ways depending on the method they are to be used.



MIDI IN : Receives message from another MIDI device.

MIDI OUT : Transmits message originating in the unit.

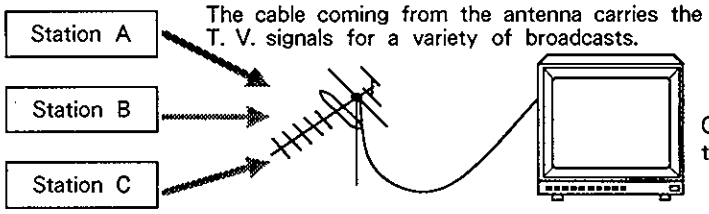
MIDI THRU : Sends out an exact copy of the message received at MIDI IN.

* In theory, any number of MIDI devices could be connected together using MIDI THRU connectors; but it is best to consider 4 to 5 devices as being the practical limit. This is because the further down the line a device is located, the more likely that signal delays will occur, and the chance of error due to deterioration in signal quality increases.
* The SPD - 8 is not equipped with a MIDI THRU connector.

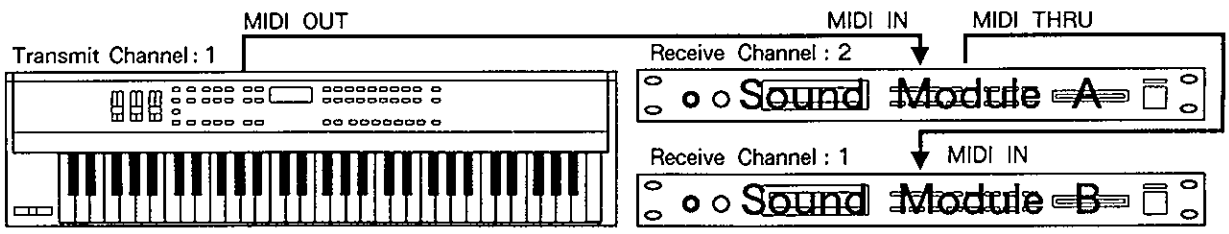
MIDI Channels

With MIDI, a single cable can be used for carrying differing sets of performance information, for a number of MIDI devices. This is possible thanks to the concept of a MIDI channel.

MIDI channels are in some ways similar to the channels on a television set. On a T.V., a variety of programs broadcast from different stations can be viewed by switching channels. This is because the information on any particular channel is conveyed only when the receiver is set to the same channel that is being used for transmission.


Station A
Station B
Station C
The cable coming from the antenna carries the T. V. signals for a variety of broadcasts.
On a T.V., the channel is selected to watch the station you want.

As an example, when the MIDI channels are set as illustrated below, and you play the keyboard, sound will be produced by only sound module B.



b. MIDI Messages Recognized by the SPD - 8

In order to convey the great variety of expression possible with music, MIDI has been provided with a large range of data types (messages). MIDI messages can be divided into two main types: Messages that are handled on each channel (Channel messages); and messages that are handled independently of channels (System messages).

■ Messages Handled for Each MIDI Channel (Channel Messages)

These messages are used to convey the events of a performance. In most circumstances they alone are sufficient for providing the necessary control. The specific results obtained by the various types of MIDI message are determined by the settings on the sound source receiving them.

● Note Messages

These messages convey what is played on the pads (They are equivalent to the performance data generated when keys are depressed on a keyboard). Some Note messages are as follows:

Note Number	Type of sound to play. (Number representing the position of the key.)
Note On	Pad is hit. (Key is pressed)
Note Off	(Finger is released from key)
Velocity	The force pad is hit with. (Speed with which the key is depressed.)

Note Numbers use the numbers 0 through 127, and normally correspond to the positions of keys on a keyboard. Middle C (C4) is number 60. Ordinarily, Note Numbers provide for differentiation among pitches. However, within a rhythm module, they serve in differentiating among the various types of percussion sounds. On the SPD - 8, a specific Note Number is assigned to each pad.

● Pitch Bender Messages

Messages which convey the action of the Bender Lever (pitch).

* Not implemented on the SPD - 8.

● Aftertouch Messages

These messages convey the functioning of Aftertouch (A function which provides changes in the timbre relative to the amount of pressure applied to keys).

* Not implemented on the SPD - 8.

● Program Change Messages

In many cases, these messages are used for changing to another sound. They employ Program Numbers, 1 through 128, which correspond to the various sounds available.

* On the SPD - 8, Program Changes are employed to change Patches.

● Control Change Messages

These messages are used to enhance the expressiveness of a performance, and include those such as Modulation and Pan. Each function is identified by a Control Number, and the functions which can be controlled will vary depending on the particular MIDI device involved.

* On the SPD - 8, Hold messages can be transmitted/received when a pedal switch is used.

■ Messages Handled Independently of MIDI Channels (System Messages)

System Messages include Exclusive messages, messages necessary for synchronized play, as well as diagnostic data.

● Common

This type includes messages such as Song Select, for selecting songs to play; and Song Position Pointer, which tracks the position within a song.

* Not implemented on the SPD - 8.

● Real - Time

Thess messages are used for synchronized performances. They include the Clock, which conveys the tempo to be used; as well as Start/Stop; and Continue - Start, which starts the song from where it was stopped last.

* Not implemented on the SPD - 8.

● Active Sensing

These messages are used to detect if the connectors have become unplugged, or if the cable is damaged.

* On the SPD - 8, Active Sensing messages are transmitted and received.

● Exclusive Messages

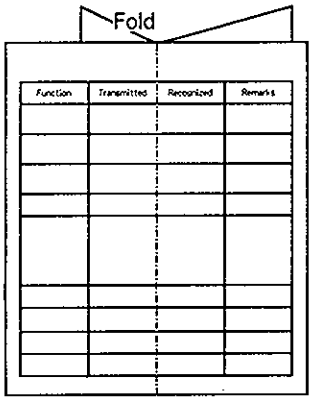
Exclusive messages handle information such as that related to a device's own unique sounds. Generally, such messages can be exchanged only between devices of the same model (by the same manufacturer).

* On the SPD - 8, messages of this type are used for transferring Patch data.

● MIDI Implimentation Chart

MIDI has made it possible for a wide range of musical instruments to communicate with each other, but that doesn't mean that all types of data can all be exchanged and be understood.
For example, you may try to use a keyboard to provide control over Aftertouch, but if the sound module you have connected doesn't respond to Aftertouch, no effect will be obtained. Thus, the only communication possible between MIDI devices that are connected together deals with data types that both of the MIDI devices understand.
It is for this reason that every owner's manual, for all kinds of MIDI devices, always includes a MIDI Implementation Chart (P.80), as a quick reference to the types of MIDI messages it is capable of handling. You should compare the MIDI Implementation Charts for both devices in order to find out which types of data can be communicated between them. Since the size of these charts is standardized, you can place them so they overlap, and more easily compare the receiving device with the transmitting device.

MIDI Device



MIDI Device

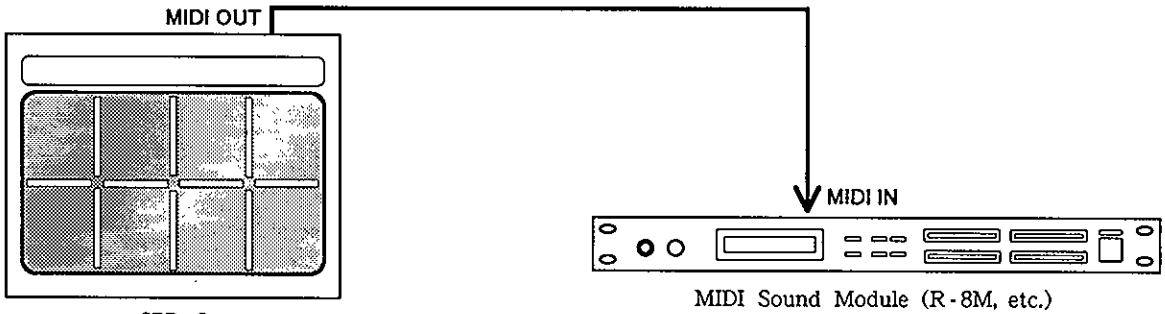
* For detailed explanation of how MIDI messages are handled, refer to "Roland Exclusive Messages" (P.74), and "MIDI Implementation" (P.78).

2. Playing External MIDI Sound Modules

The SPD - 8 can be used, by means of MIDI, to trigger external MIDI sound modules.

All parameters concerned with MIDI can be set on an individual Pad basis, and along with the Sound parameters, are stored within Patches. As a result, the choice of which sounds will be produced by the Pads can include those sounds contained internally, as well as those offered by the MIDI sound module. Also, one Pad can be used to simultaneously trigger both an internal sound and one resident in an external module.

【Making the Connections】



SPD - 8

MIDI Sound Module (R - 8M, etc.)

a. How MIDI Parameters Work

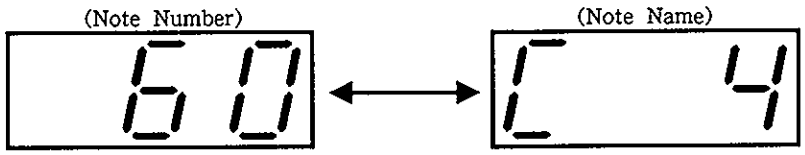
The following Parameters have settings which are made on an individual Pad basis:

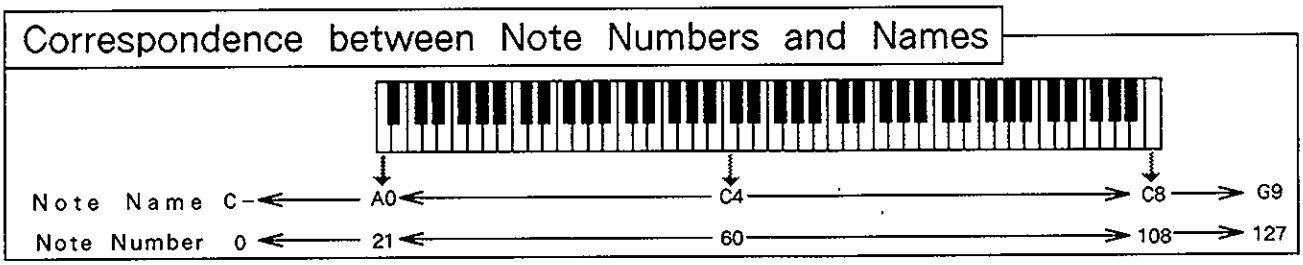
● MIDI Channel (OFF/1 – 16)

This should be set to match the channel used for reception on the external sound module. When you wish to sound solely the SPD - 8's internal sound source, it should be set to "OFF."

● Note Number (0 – 127)

Should be set to the Note Number, (used in the MIDI sound module), that corresponds to the sound you want to be played. When you use PATCH/LEVEL [▼][▲], you can make the setting while viewing the Note Number as a note name.

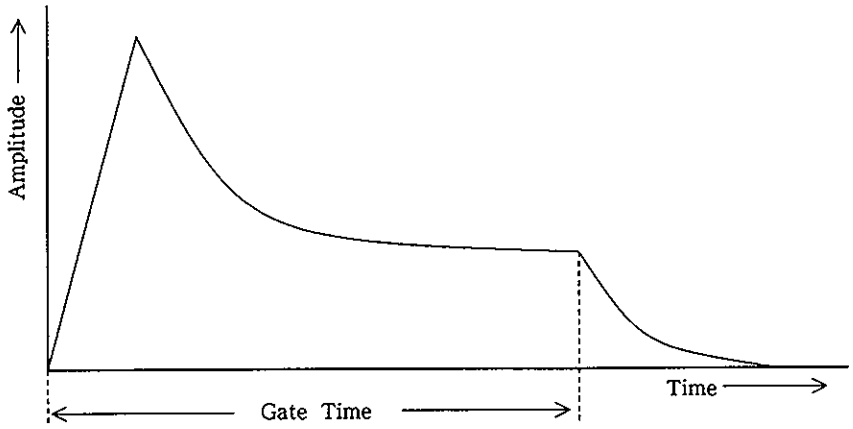




* When the SPD-8 is being used as a MIDI sound module, the Note Number that is set here will be used to play the pad's percussion sound. (See P.35)

● Gate Time (0.1 – 4.0 seconds)

The setting made here determines the length of time the MIDI sound module will produce sound (The amount of time passing from when the sound first begins until it has faded away).



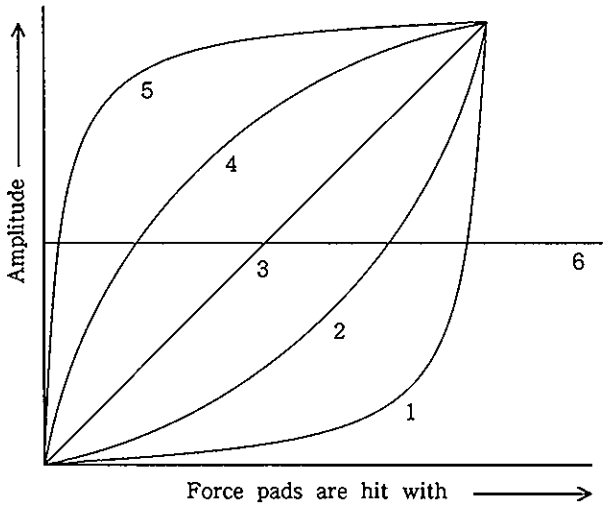
When looked at from the perspective of a keyboard, Gate Time is equivalent to the length of time that a key is depressed (Time from Note On until Note Off). Any setting for the Gate Time that you make can be confirmed by viewing the Pad Indicator, and noting the amount of time it stays lit after that Pad is hit. When "MIDI Channel" has been set to "OFF," the Pad Indicator lights up briefly, acting as a trigger for sounding of the internal sound source.
Note that if both "MIDI Channel" and "Instrument Assign" have been set to "OFF," the Pad Indicator will not light.

* If the MIDI sound module you use is not capable of receiving Note Off messages, the duration of the sound will not change even if you specify a Gate Time.
* When playing sounds having an initial amplitude that is softer than others, you may notice that they sound too weak, or sound uneven. In such cases try increasing the Gate Time.
* The actual duration of sound produced will vary depending on the settings in effect on the MIDI sound module.

● Velocity Curve (1 – 6)

The change which occurs in the amplitude (transmitted value for velocity), corresponding to changes in the force with which the pads are hit, can be selected from among the following 6 types of curves:

When Velocity Curve No. 6 is selected, the amplitude of the sound produced remains constant, regardless of changes in the force the pads are hit. In this case, the amplitude can be adjusted using "Velocity Sensitivity."



● Velocity Sensitivity (1 – 16)

This setting adjusts the sensitivity that the pads will have. The higher the value set, the higher will be the sensitivity of the pads, and thus the volume will be greater (A greater value for velocity is transmitted) even though they are hit with less force.

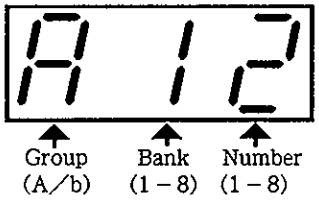
When No. 6 has been selected as the Velocity Curve, the value for Velocity that will be transmitted will be as follows:

Sensitivity	Velocity	Sensitivity	Velocity
1	7	9	71
2	15	10	79
3	23	11	87
4	31	12	95
5	39	13	103
6	47	14	111
7	55	15	119
8	63	16	127

● Program Change (OFF/1 – 128)

Program Change messages can be used to change the sounds produced by a MIDI sound module that you have connected. When you do not wish to transmit Program Change messages, it should be set to "OFF."

If the G.B.N. method of display (Group, Bank, Number) has been chosen for display of Patches, Program Change Numbers will also be displayed using the G.B.N. method (P.15).



The correspondence between the standard method of display (1 – 128) and the G.B.N. method (A11 – b88) is as shown below:

Group		Bank \ Number	1	2	3	4	5	6	7	8
	A	1	1	2	3	4	5	6	7	8
		2	9	10	11	12	13	14	15	16
		3	17	18	19	20	21	22	23	24
		4	25	26	27	28	29	30	31	32
		5	33	34	35	36	37	38	39	40
		6	41	42	43	44	45	46	47	48
		7	49	50	51	52	53	54	55	56
		8	57	58	59	60	61	62	63	64
	b	1	65	66	67	68	69	70	71	72
		2	73	74	75	76	77	78	79	80
		3	81	82	83	84	85	86	87	88
		4	89	90	91	92	93	94	95	96
		5	97	98	99	100	101	102	103	104
		6	105	106	107	108	109	110	111	112
		7	113	114	115	116	117	118	119	120
		8	121	122	123	124	125	126	127	128

Program Change messages are transmitted on each Pad's MIDI channel whenever a change in a Patch is made. If the patch has been set so that multiple pads use the same MIDI channel, yet different Program Change Numbers have been set for them, the setting held by the Pad which has the smallest Pad Number is given priority.

b. Setting the MIDI Parameters

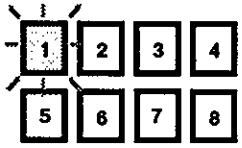
① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 – 32) for which the settings are to be made.

② Press [EDIT] to select the Edit Mode.

The Patch Display will start blinking, indicating that the unit is in the Edit Mode.

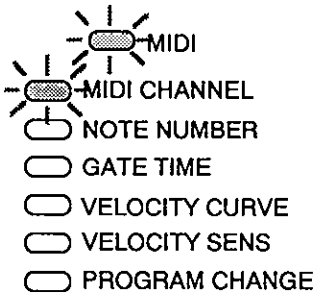
③ Strike the Pad for which you wish to make changes.

The Pad Indicator for the Pad which you hit should be blinking.



* Should the Pad Indicator for the Pad you hit not be blinking, strike it again with a little more force.

④ Press [MIDI] as many times as needed until the indicator for the Parameter you wish to set is lit.



⑤ Using VALUE [▼][▲], make the change in the value.

Press [▼] to lower the value, and [▲] to increase it. If you continue holding down either button, you obtain a continuous change in the value. A more rapid change in the value is obtained if you hold down [▲] (or [▼]) while you press [▼] ([▲]).

You can hit the Pad to hear the results of your changes.

⑥ To make changes for other parameters, repeat steps ④ and ⑤.

⑦ To make settings for other pads, repeat steps ③ through ⑥.

⑧ Press [EDIT] to return to the Play Mode.

* By using the Copy function, you can copy only the MIDI parameters of another Patch (P.49).

● When wishing to have the same value for a parameter be set for all pads

If, after making value settings (as in ⑤ above), you press [ALL/ENTER], you will see the message shown below. The parameter value that is displayed at that time will be set for all of the pads. At this time, all of the Pad Indicators will light momentarily.

* This feature is convenient when wishing to set the MIDI channel.

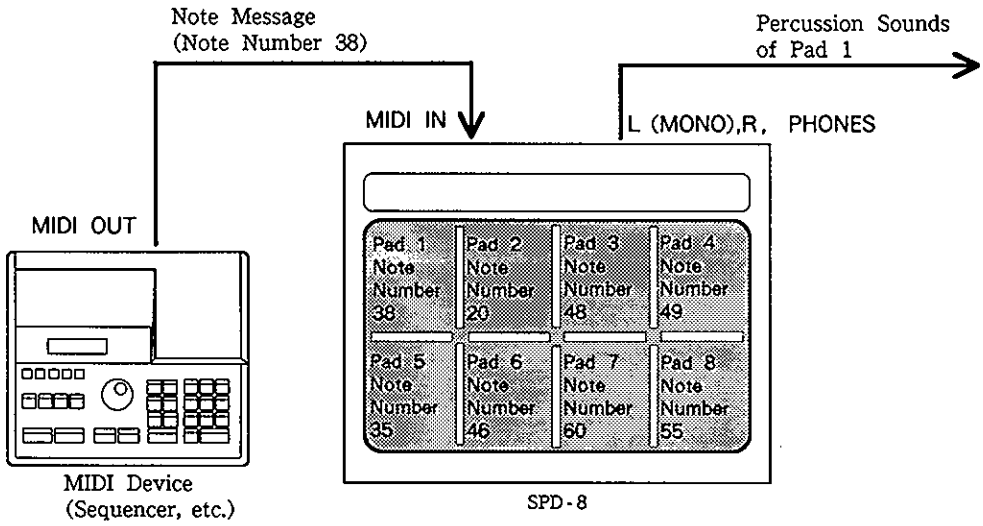
3. Employing the SPD-8 as a MIDI Sound Module

The SPD-8's internal sound source can also be played under the control of MIDI message received from an external device.

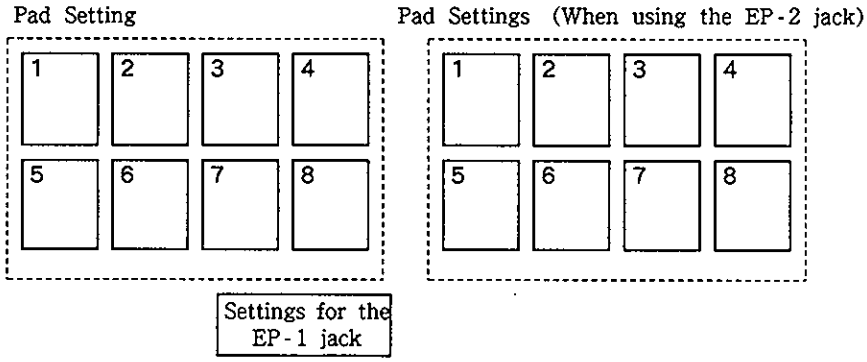
The percussion sound set for each pad using the Sound parameters will be played using the Note Numbers set for the MIDI parameters.

Note messages arriving from an external device are received on the Basic Channel.

【Example Setup】



MIDI message arriving from an external device can also be used to play percussion sounds that are assigned to pedal switches connected to the EP-1/EP-2 jacks. Thus, with any one Patch, up to 17 types of percussion sounds can be played. Moreover, by changing Patches in the course of a performance, you can play other percussion sounds.

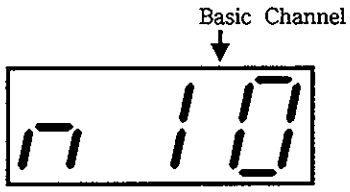


a. Setting the Basic Channel

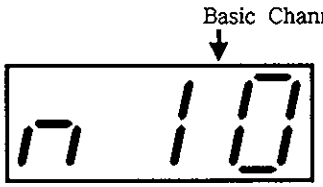
The SPD - 8 uses the Basic Channel in order to receive MIDI messages (Note, Program Change, Exclusive, and Hold messages). Whenever you wish to employ an external MIDI device to play the SPD - 8's internal sound source, you need to set the SPD - 8's Basic Channel so that it matches the channel the external MIDI device is using for transmission.

① After turning power "OFF" for a moment, hold down [EDIT] while you turn the power switch "ON" again.

The patch display should appear as follows:



② Using VALUE [▼][▲], set the Basic Channel (1 – 16).



③ Turn the power "OFF", then "ON" again, and the unit will once again be in the Play Mode.

b. Making the Settings for Each Pad

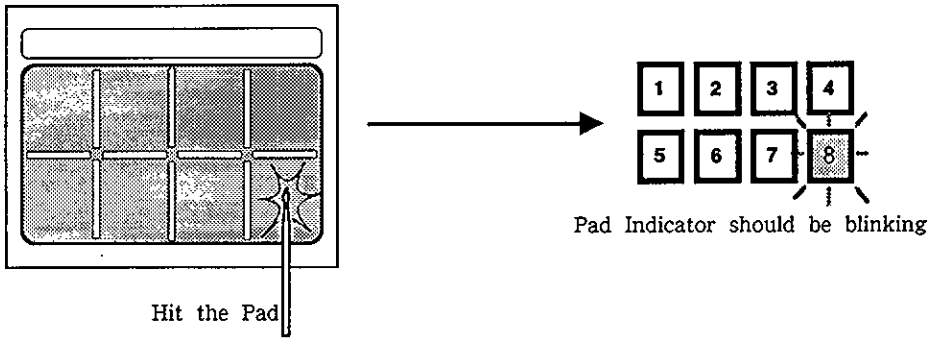
The following steps are taken to set the Note Numbers and the percussion sounds for each pad that will be sounded upon reception of MIDI messages from an external device.

① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 – 32) for which you wish to make the settings.

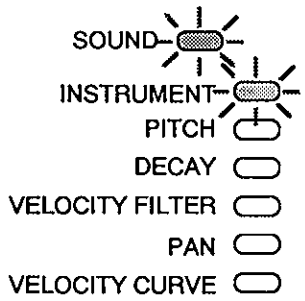
② Press [EDIT] to select the Edit Mode.

③ Hit the Pad for which the settings are to be made.

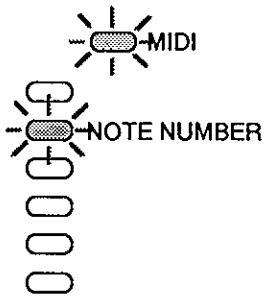
The Pad Indicator corresponding to the pad you hit will start blinking.



④ Using the Sound parameters, set the percussion sound (P.18).



⑤ Under MIDI parameters, set the Note Number (0 – 127) (P.29).



While in this state, you can hear and confirm that the sound is set correctly if you have the external device send the Note Number you have set.

⑥ To make settings for other Pads, repeat steps ③ through ⑤.

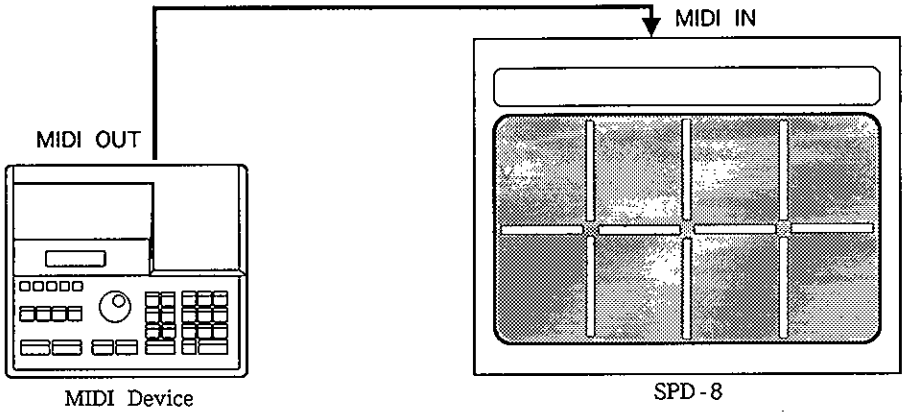
⑦ Press [EDIT] to return to the Play Mode.

* In cases where you have set multiple Pads so they share the same Note Number, only one of the sounds will be produced, in the order of priority shown below:

Pad 1 > Pad 2 >·····> Pad 8 > That set for EP-1 > Pad 1 > Pad 2 >·····> Pad 8
That set for EP-2

c. Playing the Internal Sound Source

[Making Connections]



① Set the SPD - 8's Basic Channel so that it matches the channel the external MIDI device will use for transmission (Setting the Basic Channel: P.36).

② If necessary, use PATCH/LEVEL [▼][▲] to select the Patch.

③ The SPD - 8 will now sound when the external MIDI device is played.

Upon reception of a Note message from the external MIDI device, the percussion sound assigned to whichever Pad carries the setting for the Note Number received will be sounded.

* Sounds will be held (sustained) if Hold messages are received from the external MIDI device. For information on which percussion sounds can have Hold applied to them, refer to "List of Percussion Sounds," P.65.

Additionally, if Program Change messages are received on the Basic Channel (P.36), a Patch change will take place in accord with the Program Number (1 – 32) that was received (only while in the Play Mode). Note however that no Patch change will occur if the Program Number that is received is a number from 33 to 128.

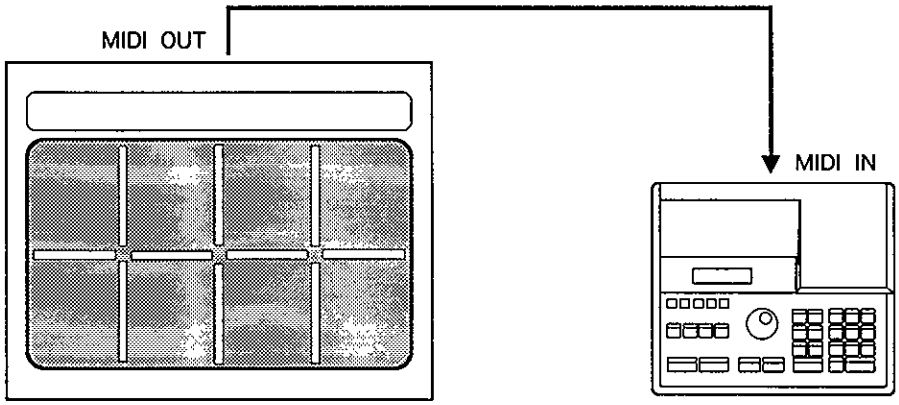
4. Data Transfer Using Exclusive Messages

By employing MIDI Exclusive Messages, Patch data stored in the SPD - 8 can be transferred to another SPD - 8 or to a sequencer. Such Exclusive Messages are sent over the Basic Channel.

a. Transmission (Bulk Dump)

Follow the procedure below to transfer the patch data stored in the SPD - 8.

[Connections]



[Procedure]

① While holding down [EDIT], turn the power switch "ON."

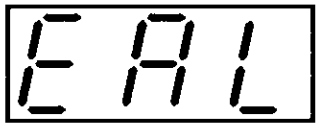
The Patch Display will appear as shown below.

② Using VALUE [▼][▲], set the MIDI channel (1 – 16) over which the Exclusive messages are to be sent.

③ Press [MIDI]

④ Using VALUE [▼][▲], select the Patch (1 – 32) that is to be transferred.

If you wish to send all of the Patch data at one time, select the readout shown below:



⑤ Prepare the receiving device so that it is ready to receive Exclusive messages.

* If you intend to send SPD-8 data to a sequencer, first carefully read the manual for the sequencer you use.

⑥ Press [ALL/ENTER] and the data transfer will begin.

The readout shown below will appear, indicating the transfer has been completed.

⑦ If you wish to transfer data for another Patch, repeat steps ④ through ⑥.

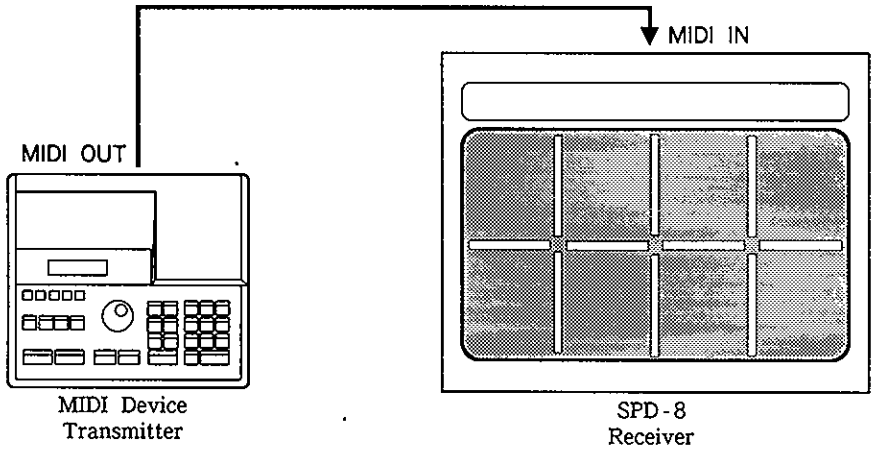
⑧ Turn the power switch "OFF", then "ON" again, and the unit will once again be in the Play Mode.

b. Reception (Bulk Load)

Follow the procedure below to receive Patch data stored in another SPD - 8 or in a sequencer.

* Take care when this procedure, since the data that is loaded will replace the settings for any Patch you already have at that location.

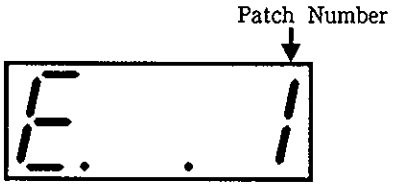
[Connections]



① Match the MIDI channel that will be used by the transmitting device to send the Exclusive messages with the Basic Channel on the SPD - 8. (Setting the Basic Channel: P.36)

② Press [EDIT] to select the Edit Mode.

③ Start sending the Exclusive messages from the MIDI device you have connected.
The number of the Patch received will appear in the Patch Display.

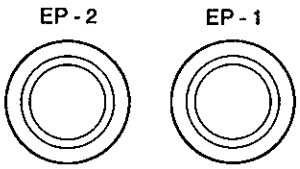


④ Press [EDIT] twice to return to the Play Mode.

* Exclusive messages cannot be received while the following types of settings are made: Patch Copy, Patch Chain, and those for the EP - 1/2 jacks.

[2] Using Pedal Switches

The functions offered by the SPD - 8 can be increased further by adding optional pedal switches (DP - 2, for example). Pedal switches are connected to either the EP - 1 or EP - 2 jacks on the unit's rear panel.



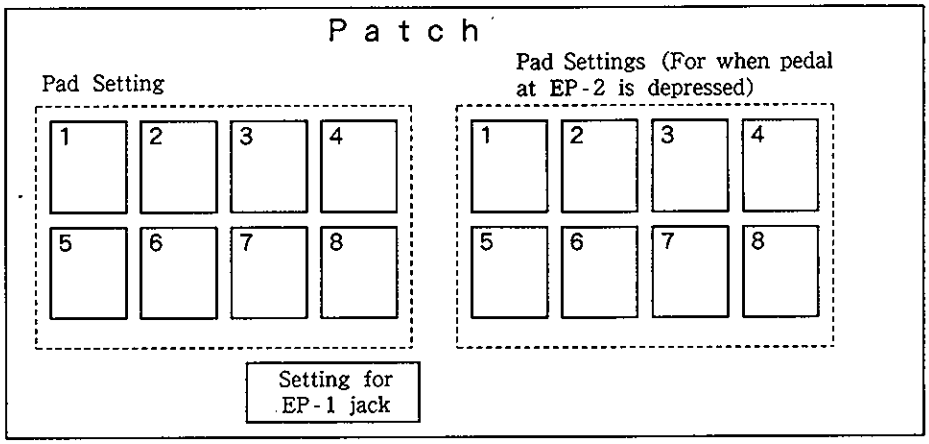
● Using the EP - 1 Jack

With pedals connected to this jack, you can choose between two possible functions. One allows you to trigger sounds in the internal sound source (or in a MIDI sound module) when you depress the pedal. The other is a standard hold/sustain function.

● Using the EP - 2 Jack

Once you have a pedal switch connected to the EP - 2 jack, 2 sounds can be assigned to each of the Pads. By depressing the pedal, you can then switch between them. In addition to the ordinary settings made for the Pads, you can also make, for each Pad, settings that determine what the sound will be when the Pad is hit while the pedal is depressed.

* Settings for the EP - 1/EP - 2 jacks can be stored in Patches, in the same way as for the other settings for each Pad.



1. Playing Sounds Using a Pedal Switch

By operating a pedal switch connected to the EP - 1 jack, you can trigger sounds in the internal sound source or in an external MIDI sound module.

Settings for the Sound and MIDI parameters can be made for a pedal switch in the same way they are made for the Pads.

* For information on how the Sound parameters and MIDI parameters work, refer to P.18 and P.29, respectively. Note, however, that settings for the MIDI parameters of "Program Change" and "Velocity Curve" cannot, in this case, be made.

● Setting For the Force of hits

Since a pedal switch provides only the On/Off function, it cannot be used like the unit's Pads to control volume, or timbre (when using the "Velocity Filter" Sound parameter), which are dependent on the playing used. For this reason, you need to beforehand make a setting representing the force of hits. When triggering the internal sound source, use the "Velocity Curve" Sound parameter (1 – 16). When triggering an external MIDI sound module, use the "Velocity Sensitivity" MIDI parameter.

● Using a Pedal Switch to Control Duration with a MIDI Sound Module

The duration of sounds played using a MIDI sound module are ordinarily determined by setting the "Gate Time". However, you can also sustained a sound for as long as you have the pedal switch (connected to the EP - 1 jack) depressed.

In such cases, you need to set the "Gate Time" MIDI parameter to "OFF." With "OFF" selected, sound will be heard when the pedal switch is depressed; and a Note Off message will not be sent until the pedal is released.

[Setting the Parameters]

① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 – 32) for which you wish to make the settings.

② Press [EDIT] to select the Edit Mode.
The Patch Display will be blinking, indicating that the Patch can be edited.

③ Depress the pedal switch connected to the EP - 1 jack.
The following readout will be displayed for a moment, indicating that the parameters for the pedal switch can now be edited. All Pad Indicators will go out.

During all the steps that follow, you must keep the pedal switch depressed.

④ Press [SOUND] to select the Sound parameter you wish to edit.

⑤ Set the value using VALUE [▼][▲] .
Here, you can hit any of the Pads to check out the sound.

* While you have the Sound parameter selected, you can use [PATCH/LEVEL] to adjust the volume for percussion sound (P.23).

If you select the readout shown below under "INSTRUMENT ASSIGN," the pedal switch will then function as a Hold pedal (P.45), and thereafter you will not be able to select any other parameters even though you press [SOUND].

⑥ Press [MIDI] to select the MIDI parameter for which you wish to make a new setting.

* "Velocity Curve" and "Program Change" cannot be selected.

⑦ Set the value using VALUE [▼][▲] .
You can hit any of the pads to listen to the sound if you wish.

* If you do not intend to play a MIDI sound module, the MIDI channel should be set to "OFF".

⑧ Once you have finished making settings, remove your foot from the pedal switch.

⑨ Press [EDIT] once again to return to the Play Mode.

* [ALL/ENTER] is not available for use when making settings for the EP - 1 jack.

2. Use as a Hold Pedal

A pedal switch that is connected to the EP - 1 jack can also be used as a Hold pedal. While in the Play Mode, you can depress the pedal switch and the sound will be sustained for as long the pedal is depressed. You can also depress the pedal switch first and then hit a Pad, and the sound will be sustained.

● Holding sounds from the internal sound source

There are three sounds to which Hold can be applied: Vibraphone, Glockenspiel, and Marimba. Sounds other than these cannot be sustained (see "List of Percussion Sounds," P.65). Note that even when sounds are held, they will gradually diminish in volume.

● Holding sounds from a MIDI sound module

Sounds from a MIDI sound module you have connected can be sustained by employing the "Hold" Control Change message. (Control Number 64)

* Not all MIDI sound modules are equipped to receive Hold messages.

[Setting the Parameters]

① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 – 32) for which you wish to make the settings.

② Press [EDIT] to select the Edit Mode.

③ Depress the pedal switch connected to the EP - 1 jack.

The following readout will be displayed for a moment, indicating that the parameters for the pedal switch can now be edited. All Pad Indicators will go out.

During all the steps that follow, you must keep the pedal switch depressed.

④ Press [SOUND] to select INSTRUMENT ASSIGN. Use VALUE [▼][▲] until you have the readout below selected.

* At this point, you cannot select any other Sound parameters even though you press [SOUND].

⑤ Press [MIDI] to select MIDI CHANNEL, then set the MIDI channel (1 – 16) using VALUE [▼] [▲].

It should be set to the receive channel on the MIDI sound module (The MIDI channel of the Pad to which the sound you wish to hold is assigned).

* If you do not wish to transmit MIDI Hold messages (you wish to have only sounds from the internal sound source to be sustained), you can set it to a MIDI channel that is not being used by any MIDI sound module that is connected.

* At this point, you cannot select any other MIDI parameters even though you press [MIDI].

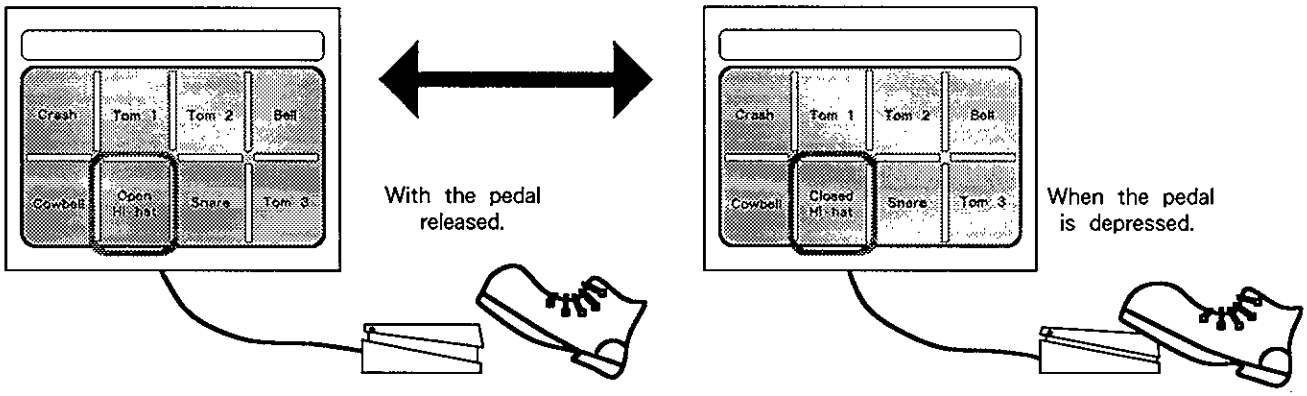
⑥ Once you have finished making the settings, release the pedal switch.

⑦ Press [EDIT] once again to return to the Play Mode.

3. Using One Pad to Alternately Play Two Sounds

By connecting a pedal switch to the EP - 2 jack, any particular Pad can be assigned 2 sounds, and the pedal can then be used to switch between.

For example, if you assign both the Open Hi - hat and Closed Hi - hat to one Pad, that Pad can then be played in the same way as a real hi - hat.



In addition to the standard Pad settings, settings can also be made, using the Sound and MIDI parameters, which determine the way sound will be played when a Pad is hit while the pedal switch (connected to EP - 2 jack) is depressed. These settings are made individually for each Pad.

* For information on how the Sound parameters and MIDI parameters work, refer to P.18 and P.29, respectively.

[Setting the Parameters]

① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 – 32) for which you wish to make the settings.

② Press [EDIT] to select the Edit Mode.

The Patch Display will start blinking, indicating that the Patch can be edited.

③ Hit the Pad for which you wish to make the settings.

The corresponding Pad Indicator will light.

④ Depress the pedal switch connected to the EP - 2 jack.

The following readout will be displayed for a moment, indicating that the parameters for the selected Pad can now be edited.

During all the steps that follow, you must keep the pedal switch depressed.
While in this state, Pads other than the one selected in ③ will also reflect the "pedal - down" settings, so they can be hit to check their sound.

⑤ Press [SOUND] to select the Sound parameter. Set the value using VALUE [▼][▲].

* If you do not intend to play the internal sound source, Instrument Assign should be set to "OFF".

⑥ Press [MIDI] to select the MIDI parameter. Set the value using VALUE [▼][▲].

* If you do not intend to play the MIDI sound module, "MIDI Channel" should be set to "OFF".
* No settings can be made for Program Change.

⑦ If you wish to make settings for other Pads as well, first release the pedal for a moment, then repeat steps ③ through ⑥.

⑧ Once you have completed making the settings, remove your foot from the pedal.

⑨ Press [EDIT] once again to return to the Play Mode.

* By using the Copy function, you can copy only the settings for the EP - 2 jack from another Patch (P.49).

● When you do not wish Pad settings to change as a result of pedal action :

For Pads which are to retain standard settings (even if the pedal switch is depressed), set the "Pedal - down" parameters to "OFF". Thus, both the "Instrument Assign" Sound parameter, and "MIDI Channel" MIDI parameter should be set to "OFF".

● When you wish to set the same parameter values for all Pads :

If you press [ALL/ENTER] after setting a value, as in steps ⑤ and ⑥ above, "ALL" will appear in the display, and the value that was currently active will be set for all Pads. At this time, all Pad Indicators will light momentarily.

[3] The Copy Function-Convenient for Making Settings

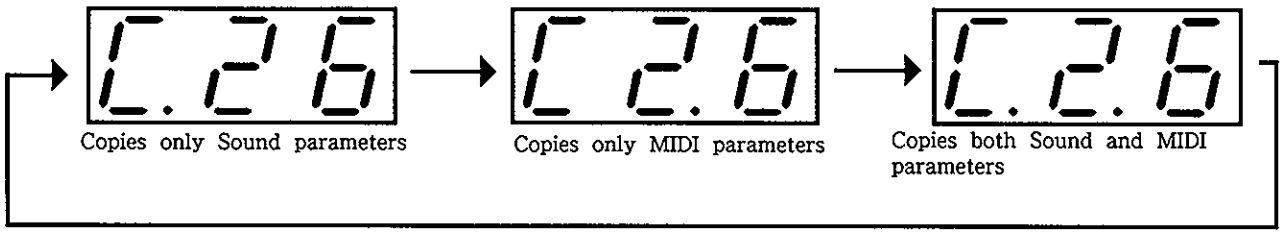
By using the Copy function, all settings in a Patch (or certain types of settings only), can be copied to another Patch. This is convenient when you wish to create a Patch that is similar to existing one.

【Procedure】

① From the Play Mode, use PATCH/LEVEL [▼][▲] to select the Patch (1 – 32) which is to be the destination for the Copy.

② Press [EDIT] to select the Edit Mode.

③ Press [COPY] to select the parameters that are to be copied.
With each successive press of [COPY], the display will change as shown below, allowing you to select which parameters from within a Patch will be copied.



Copies only Sound parameters

Copies only MIDI parameters

Copies both Sound and MIDI parameters

④ Using VALUE [▼][▲], select the Patch (1 – 32) you wish to copy.

⑤ Press [ALL/ENTER] and the display will appear as shown below, indicating that the copy is being performed.

To cancel the Copy procedure, press any button other than [COPY] or [ALL/ENTER].

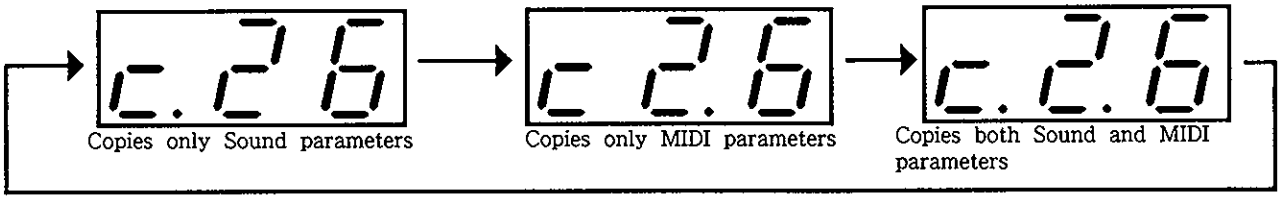
* Settings which have been made a pedal switch connected to the EP - 1 jack are copied at the same time. (P.42)
* The setting for the EP - 2 are not copied when this procedure is carried out.

⑥ Press [EDIT] once again to return to the Play Mode.

● When wishing to copy settings made for the EP-2 jack :

If you carry out steps ③ through ⑤ above when making settings for the EP - 2 jack, you can copy the Pad settings (P.42) that apply when the pedal connected to the EP - 2 jack is depressed.

While in the Edit Mode, keep the pedal depressed while you press [COPY]. With each successive press of [COPY], the display will change as shown below, allowing you to select the parameters you wish to copy.



Copies only Sound parameters

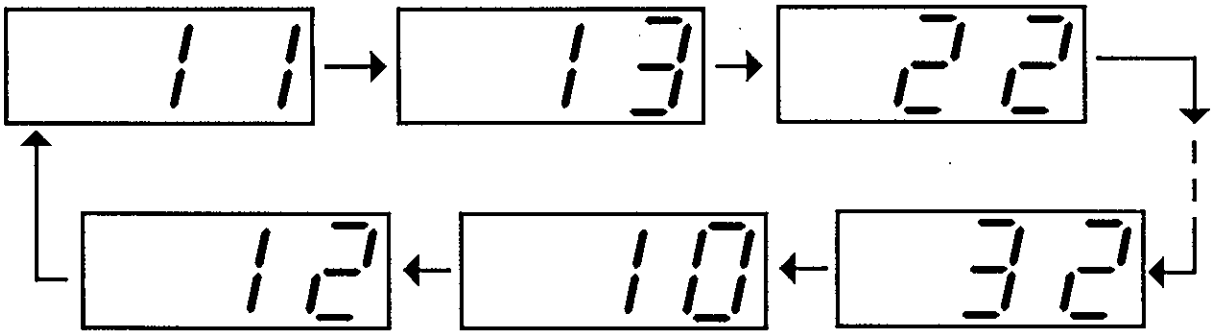
Copies only MIDI parameters

Copies both Sound and MIDI parameters

4 Patch Chain

This feature allows you to select Patches in any predetermined order.

To use the Patch Chain function, select the Patches that you intend to use in the course of a performance, and in the order you wish to use them.



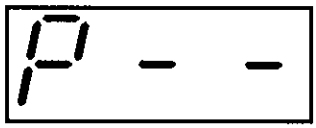
The Patch Chain function allows you to link up to 32 Patches in the chain.

● Setting Up a Patch Chain

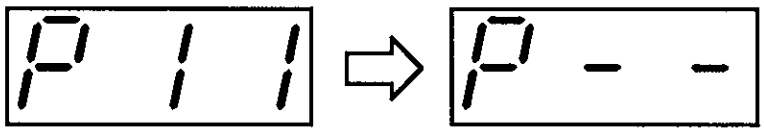
① Press [EDIT] to select the Edit Mode.

② Press [PATCH CHAIN].

The Parameter and Pad Indicators will go out, indicating that a Patch Chain can be made.



③ Use VALUE [▼] [▲] to select the first Patch (1 – 32), then press [ALL/ENTER].



* If the G.B.N. method of display has been chosen for display of Patches in the Play Mode, Patch Numbers here will also be displayed using the G.B.N. method (P.15).

④ Repeat the selection procedure in step ③ until you have selected, in order, all the Patches you need.

* If partway through the procedure you decide to cancel setting up a Patch Chain, press [PATCH CHAIN]. Once this button is pressed, all settings made up to then are cancelled.

⑤ Press [ALL/ENTER] once again and the following readout will be displayed, indicating that the Patch Chain has been stored in memory.

⑥ Press [EDIT] once again to return to the Play Mode.

● Patch Changes Using a Patch Chain

Follow the steps below to change Patches in the order they were set in the Patch Chain.

① Check to make sure you are in the Play Mode.

② Press [PATCH CHAIN].

The following will appear in the display:

③ By pressing PATCH/LEVEL [▼][▲], the Patches will change in the order in which they were set.

When you reach the last Patch, the unit goes back to the first Patch again.

* If you connect a pedal switch to the PATCH SHIFT jack on the unit's rear panel, you can then use the pedal switch to change Patches.

④ Press [PATCH CHAIN] once again, to return to the Play Mode.

* While using the Patch Chain function to play, the unit cannot be put into the Edit Mode even if you press [EDIT].

● Clearing the Patch Chain

The following procedure erases the settings for the current Patch Chain.

Once you perform this procedure, the Patch Chain will not work even if you press [PATCH CHAIN] while in the Play Mode.

① Press [EDIT] to enter the Edit Mode.

② Press [PATCH CHAIN] and [ALL/ENTER], in that order, and the settings for Patch Chain will be erased.

③ Press [EDIT] once again to return to the Play Mode.

5 Restoring the Factory Preset Patch Settings

Follow the procedure below to restore the factory preset Patches you desire.

* For a listing of the Factory Preset Patch settings, see P.68.

① After turning power "OFF" for a moment, hold down [EDIT] while you turn the power switch "ON" again.
The patch display should appear as follows:

② Press [COPY].

③ Using VALUE [▼] [▲], select the Patch (1 – 32) that you wish to restore.

Should you wish to restore all of the Patches to their factory presets, select the following readout:

④ Press [ALL/ENTER] and the data for the selected Patches will be restored.

⑤ If you wish to restore other Patches to their factory presets, repeat steps ③ and ④.

⑥ Turn the power "OFF", then "ON" again, and the unit will once again be in the Play Mode.

[6] Taking full advantage of the SPD-8

The SPD - 8 is capable of being played in a variety of different ways.

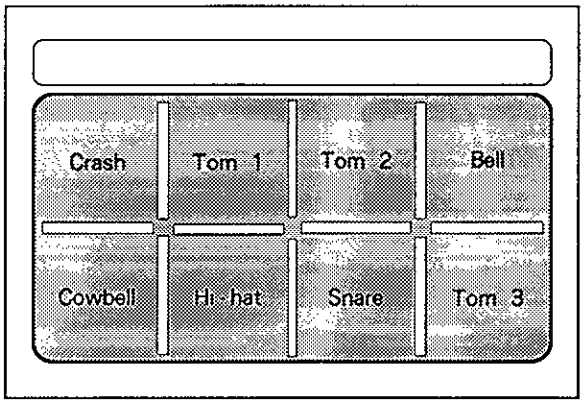
1. Using the unit like a drum set

By using two pedal switches, the SPD - 8 can be played much like a drum set.

【Example Sound Parameter Settings】

Parameter \ Pad	1	2	3	4	5	6	7	8
INSTRUMENT	40	22	22	46	79	37	13	22

Parameter \ Pad	EP - 1	EP - 2 (Pad 6)
INSTRUMENT	4	34



The pedal switch connected to the EP - 1 jack is used to play the Kick. The pedal switch connected to the EP - 2 jack is used to switch between Open and Closed Hi - hats. Toms 1 through 3 are played while changing the "Pitch" Sound parameter.

If you use the STEREO IN jacks to input sound from a tape recorder, you can conveniently practice while listening to music, (through headphones if you wish). You could also record what you play in a MIDI sequencer.

2. Playing melodies using the internal sound source

The Pitch, a Sound parameter, can be set as shown below. You will then be able to play melodies.

[Example Sound Parameter Settings]

Parameter \ Pad	1	2	3	4	5	6	7	8
INSTRUMENT	49	49	49	49	49	49	49	49
PITCH	−10	−7	−3	0	−12	−8	−5	−1

Since an increase of "1" for Pitch is equal to a semitone (100 cents), these settings allow you to play over the range of one octave.

If you connect a pedal switch to the EP - 2 jack, you can then play tones over a range of two octaves. In this case, the Pads should be set as shown below (with respect to the pedal - down state). Then when you depress the pedal you can shift the pitch by an octave.

Parameter \ Pad	1	2	3	4	5	6	7	8
INSTRUMENT	49	49	49	49	49	49	49	49
PITCH	+2	+5	+9	+12	0	+4	+7	+11

* If you connect a pedal switch to the EP - 1 jack, it can be used as a Hold pedal (For information on use of a Hold pedal, see P.45).

3. Playing melodies using a MIDI sound module

Melodies can be played using a MIDI sound module (such as a synthesizer) that you have connected to the unit. In such cases, instead of setting the "Pitch" Sound parameter, you need to set the "Note Number," a MIDI parameter.

【Example Parameter Settings】

Set the MIDI channels for all Pads so they match the channel(s) used for reception by the MIDI sound module.

If you use PATCH/LEVEL [▼][▲], you can make the setting while viewing the Note Number as a note name (C4, etc.).

Parameter \ Pad	1	2	3	4	5	6	7	8
NOTE NUMBER	50	53	57	60	48	52	55	59

If you connect a pedal switch to the EP - 2 jack, and set the Pads as shown below (with respect to the pedal - down state), you can then play within a range of two octaves.

Parameter \ Pad	1	2	3	4	5	6	7	8
NOTE NUMBER	62	65	69	72	60	64	67	71

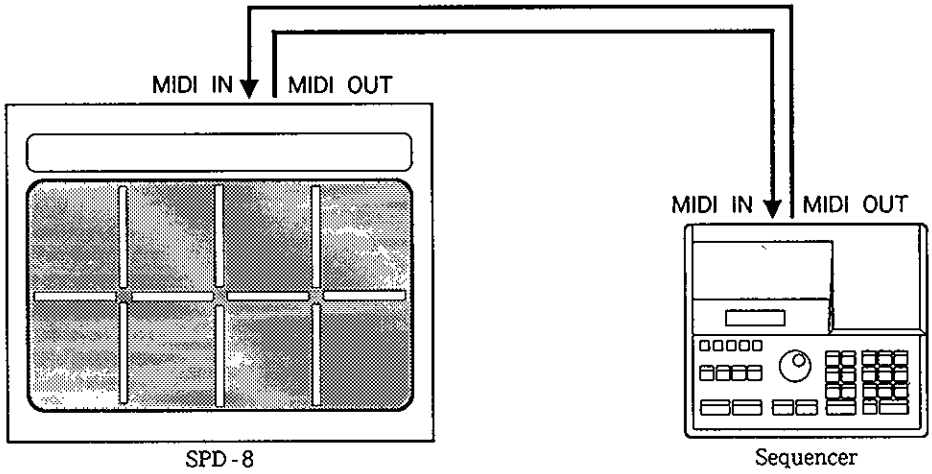
* If you connect a pedal switch to the EP - 1 jack, it can be used as a Hold pedal (For information on use of a Hold pedal, see P.45).

* On the SPD - 8, settings for the Note Number can be made within a range of from 0 to 127 (C – to G9). However, if you set the Note Number to a value that is excessively high or low, you may obtain unexpected results depending on the particular sound module used. For example, pitch changes may not occur, or sounds could be left out.

4. Recording what you play on the SPD-8 into a sequencer

A sequencer can be used to record what is played on the SPD - 8. Afterwards, if you use the recorded performance data to play the SPD - 8, you can listen to a faithful reproduction of what was originally played.

【Making Connections】



【Settings for each Pad】

① Using the Sound parameters, set the percussion sound that will be played by each Pad (see P.18).

② Set the MIDI channel (a MIDI parameter) for all Pads to the same value (for example "10") (see P.29).

③ Set a different Note Number (a MIDI parameter) for each Pad (see P.30).

【Recording】

① Start recording on the sequencer.

② Play the SPD - 8's Pads until you have recorded what you want.

③ Stop the sequencer.

【Using the recorded performance data to play the SPD - 8】

Set the SPD - 8's Basic channel so it matches the channel used for transmission by the sequencer (The MIDI channel set for each Pad.) (see P.36).

If you start the sequencer, the performance data that was recorded into the sequencer will trigger the SPD - 8.

Section Ⅲ

《REFERENCE》

Troubleshooting Check here first before assuming there is a malfunction.

〈When Playing the Internal Sound Source〉

Sound Is Not Produced

◎ Are you sure volume is not set to "0"?

Recheck the volume settings on the SPD - 8, as well as those for any amplifiers and mixers you have connected.

☞ Volume (see P. 13)

◎ Can you hear sound through headphones?

If you can, the problem is most likely a damaged cord, or with the amplifier or mixer you are using. Check the devices you are using, and recheck all your connections.

◎ Are you sure you don't have the "Instrument Assign" Sound parameter set to "OFF"?

Any Pad for which Instrument Assign is "OFF" will not produce any sound.

☞ (see P. 18)

Sound Is Too Low

◎ Do you have the volume too low?

Recheck the volume level you are using on the SPD - 8, and any amplifiers and mixers you have connected.

☞ Volume (see P. 13)

◎ Do you possibly have the Level for each Pad set too low?

☞ (see P. 23)

◎ Are you sure that the value for "Velocity Curve" a Sound parameter, is not set too low?

☞ Velocity Curve (see P. 21)

Sound Seems Strange

◎ Have you changed the value for "Velocity Filter" a Sound parameter?

☞ Velocity Filter (see P. 20)

◎ Have you changed the value for "Pitch" a Sound parameter?

☞ (see P. 19)

Sounds You Didn't Intend To Use Are Heard

◎ Are you sure that an external MIDI sound module isn't assigned to the same Pad?

If you do not intend to play a MIDI sound module, the "MIDI Channel" MIDI parameter should be set to "OFF."

☞ (see P. 29)

〈When Playing an External MIDI Sound Module〉

Sound Is Not Produced

◎ Have you checked to make sure that all MIDI devices are connected properly?

Check if the connections at the MIDI OUT connector on the SPD - 8 and the MIDI IN connector on the MIDI sound module are made securely. Also, make sure the cable is not damaged.

◎ Is the volume on the MIDI sound module turned down too low?

◎ Do you have the "MIDI Channel" MIDI parameter set correctly?

Make sure that MIDI Channel is not set to "OFF", and that the MIDI channel for the Pads matches that of the MIDI sound module.

☞ (see P. 29)

◎ Do you have the "Note Number" MIDI parameter set correctly?

Check the Note Numbers being used by the MIDI sound module.

☞ (see P. 30)

Sound Is Too Low

◎ Are you sure the "Gate Time" MIDI parameter is not set too short?

For sounds which start out softly, you should set the Gate Time to a fairly long value.

☞ (see P. 30)

◎ Are you sure that "Velocity Curve" a MIDI parameter, is not set too low?

☞ Velocity Curve (see P. 31)

◎ Are you sure that "Velocity Sensitivity" a MIDI parameter, is not set too low?

☞ Velocity Sensitivity (see P. 31)

Volume Doesn't Change with Playing Force

◎ Make sure you don't have the "Velocity Curve" MIDI parameter set to "6".

☞ Velocity Curve (see P. 31)

No Change in the Duration of Sounds from MIDI Sound Module Even If Gate Time Is Changed

◎ Are you possibly using a MIDI sound module that is not capable of receiving Note Off messages? Or is it in a mode where Note Off messages are ignored?

Refer to the manual for your MIDI sound module.

Sounds on the MIDI Sound Module Change when Patches Are Changed

◎ Do you possibly have settings for "Program Change" a MIDI parameter, set to apply to the Pads?

☞ Program Change (see P. 32)

Even With Program Changes Set for the Pads, Sounds on MIDI Sound Module Won't Change

◎ Make sure the "Program Change" MIDI parameter is not set to "OFF".

☞ Program Change (see P. 32)

◎ Are you sure the MIDI channel for the Pads and the channel for the MIDI sound module have been set correctly?

Check that the MIDI channel for the Pads and that of the MIDI sound module are set correctly.

☞ (see P. 29)

◎ Are you using a MIDI sound module that is not capable of receiving Program Change messages? Or, could it be in a mode where Program Change messages cannot be received?

Refer to the manual for your MIDI sound module.

〈When Playing the SPD-8 Using an External Device〉

Sound Is Not Produced

◎ Are you sure the SPD-8's Basic channel matches the transmit channel used by the external device?

Set the channels so they match.

☞ (see P. 36)

◎ Is the percussion sound you wish to have played assigned to a Pad?

No sound will be heard from percussion sounds that are not assigned to a Pad.

☞ (see P. 18)

◎ Do you have the Note Number set correctly?

Sound will not be produced when Note Numbers that are not set for specific Pads are received. Either change the Note Numbers, or change to a Patch which has appropriate Note Number settings.

☞ (see P. 30)

◎ Do you possibly have the same Note Number set for more than one Pad?

With the same Note Number set for multiple Pads, there will be only one of those Pads which can produce sound. For each Pad you use, set a different Note Number.

☞ (see P. 30, 37)

Unexpected Sound Heard

◎ Do you possibly have the same Note Number set for more than one Pad?

With the same Note Number set for multiple Pads, there will be only one of those Pads which can produce sound. For each Pad you use, set a different Note Number.

☞ (see P. 30, 37)

〈Pedal Switch〉

Pedal Switch Won't Work

◎ Make sure the pedal switch is connected properly.

Internal Sound Isn't Heard when Pedal Is Depressed

◎ Are you sure the volume on the SPD-8 is not set to "0"?

Hit the Pads to check if sound can be heard.

☞ (see P. 13)

◎ Do you have the "Instrument Assign" Sound parameter for the EP-1 jack set to "HLD"?

The setting for Instrument Assign should be corrected.

☞ (see P. 44)

Hold Doesn't Work for Internal Sound when Pedal Is Depressed

◎ Do you have the "Instrument Assign" Sound parameter for the EP-1 jack set to "HLD"?

☞ (see P. 46)

◎ Are you playing a percussion sound for which Hold cannot be applied?

Check the List of Percussion Sounds, P. 65.

Hold Doesn't Work for MIDI Sound Module when Pedal is Depressed

◎ Do you have the "Instrument Assign" Sound parameter for the EP - 1 jack set to "HLD"?

☞ (see P. 46)

◎ Is the MIDI channel for the EP - 1 jack matched to the MIDI channel on the MIDI sound module?

Set the MIDI channels so they match.

☞ (see P. 46)

◎ Could you be using a MIDI sound module that is not capable of receiving Hold messages?

Refer to the manual for your MIDI sound module.

〈General〉

Patches Set for Patch Chain Won't Change

◎ Are you sure Patch Chain was set properly?

After setting up a Patch Chain, while in the Edit mode, you must press [ALL/ENTER], otherwise it will not be stored in memory.

☞ (see P. 51)

◎ Are you in the Play mode?

Patch Chain is available only from the Play mode.

◎ Are you in the state where the Patch Chain can be played?

☞ Patch Chain (see P. 52)

Exclusive Messages Are Not Received

◎ Have you checked to make sure the transmit channel on the transmitting device matches the SPD - 8's Basic channel?

☞ Basic Channel (see P. 36)

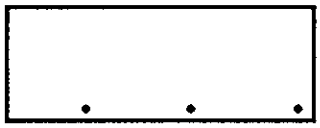
Pad Indicators Won't Light

◎ Do you possibly have both "MIDI Channel" and "Instrument Assign" set to "OFF"?

☞ MIDI Channel (see P. 29), Instrument Assign (see P. 18)

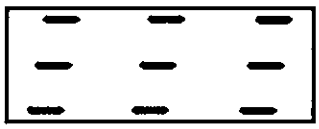
Error Messages

1. Errors Pertaining to the SPD-8 Itself



Cause : An error occurred within the unit.

Remedy: Consult with your Roland dealer, or the nearest Roland Service Station.



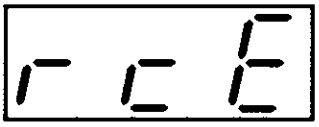
Cause : An error occurred within the unit.

Remedy: Consult with your Roland dealer, or the nearest Roland Service Station.

Cause : The backup battery contained inside the unit is depleted. As a result, the data in memory has been lost. After initializing the Patch data, the unit goes into the Play mode after a few seconds.

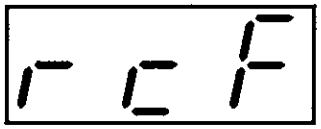
Remedy: Have the backup battery replaced your Roland dealer, or the nearest Roland Service Station.

2. Errors Concerning MIDI



Cause : MIDI signals could not be received correctly.

Remedy: Press any button, and the unit will return to what was displayed originally. After checking that all connections with external MIDI devices are made properly, repeat the attempted procedure.



Cause : An excessive amount of MIDI message was received all at once, and could not be processed satisfactorily.

Remedy: Press any button, and the unit will return to what was displayed originally. Try reducing the amount of MIDI message that is to be sent to the SPD-8, and repeat the attempted procedure.

Cause : Exclusive messages could not be received correctly.

Remedy: Press any button, and the unit will return to what was displayed originally. Then try performing the procedure again.

List of Percussion Sounds

* Percussion Sounds appearing with a "○" in the Hold column can be sustained.

#	Percussion Sound	Filter	Hold	#	Percussion Sound	Filter	Hold
1		Low Pass		31		Low Pass	
2	Dry Kick	High Pass		32	808 Tom	High Pass	
3		Combination		33		Combination	
4		Low Pass		34		Low Pass	
5	Room Kick	High Pass		35	Closed Hi-hat	High Pass	
6		Combination		36		Combination	
7		Low Pass		37		Low Pass	
8	808 Kick	High Pass		38	Open Hi-hat	High Pass	
9		Combination		39		Combination	
10		Low Pass		40		Low Pass	
11	Dry Snare	High Pass		41	Crash Cymbal	High Pass	
12		Combination		42		Combination	
13		Low Pass		43		Low Pass	
14	Room Snare	High Pass		44	Ride Cymbal	High Pass	
15		Combination		45		Combination	
16		Low Pass		46		Low Pass	
17	808 Snare	High Pass		47	Ride Cymbal Bell	High Pass	
18		Combination		48		Combination	
19		Low Pass		49		Low Pass	○
20	Side Stick	High Pass		50	Vibraphone	High Pass	○
21		Combination		51		Combination	○
22		Low Pass		52		Low Pass	○
23	Room Tom	High Pass		53	Marimba	High Pass	○
24		Combination		54		Combination	○
25		Low Pass		55		Low Pass	○
26	Dry Tom	High Pass		56	Glockenspiel	High Pass	○
27		Combination		57		Combination	○
28		Low Pass		58		Low Pass	
29	Electronic Tom	High Pass		59	Xylophone	High Pass	
30		Combination		60		Combination	

#	Percussion Sound	Filter	Hold	#	Percussion Sound	Filter	Hold
61 62 63	Kalimba	Low Pass High Pass Combination		91 92 93	Bongo	Low Pass High Pass Combination	
64 65 66	Steel Drum	Low Pass High Pass Combination		94 95 96	Shaker	Low Pass High Pass Combination	
67 68 69	Timpani	Low Pass High Pass Combination		97 98 99	Cuica	Low Pass High Pass Combination	
70 71 72	Mute High Conga	Low Pass High Pass Combination		100 101 102	Triangle	Low Pass High Pass Combination	
73 74 75	Open High Conga	Low Pass High Pass Combination		103 104 105	Surdo	Low Pass High Pass Combination	
76 77 78	Open Low Conga	Low Pass High Pass Combination		106 107 108	808 Clap	Low Pass High Pass Combination	
79 80 81	Cowbell	Low Pass High Pass Combination		109 110 111	808 Cowbell	Low Pass High Pass Combination	
82 83 84	Timbale	Low Pass High Pass Combination		112 113 114	Scratch	Low Pass High Pass Combination	
85 86 87	Agogo	Low Pass High Pass Combination		115 116 117	Glass Crash	Low Pass High Pass Combination	
88 89 90	Claves	Low Pass High Pass Combination					

Blank Chart

This page is provided for your convenience, to be copied and used as needed.

Patch # :

	Parameter \ Pad #	1	2	3	4	5	6	7	8	EP-1
Sound Parameter	Instrument Assign									
	Pitch									
	Decay									
	Velocity Filter									
	Pan									
	Velocity Curve									
	Level									
MIDI Parameter	MIDI Channel									
	Note Number									
	Gate Time									
	Velocity Curve									—
	Velocity Sensitivity									
	Program Change									—

(Setting for the EP-2)

	Parameter \ Pad #	1	2	3	4	5	6	7	8
Sound Parameter	Instrument Assign								
	Pitch								
	Decay								
	Velocity Filter								
	Pan								
	Velocity Curve								
	Level								
MIDI Parameter	MIDI Channel								
	Note Number								
	Gate Time								
	Velocity Curve								
	Velocity Sensitivity								

Factory Preset Patch Setting

* The Instrument Assign number are those enclosed with ( ).

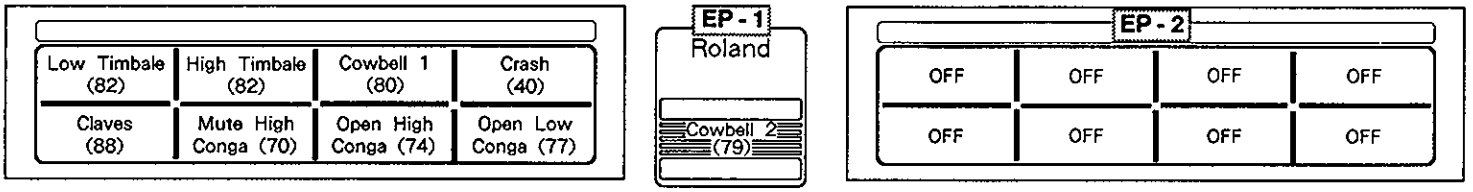
1.Room Drum Kit

2. Standard Drum Kit 1

3. Dry Drum Kit 1 / Steel Drum

4. Standard Drum Kit 2

5. Latin Set 1



6. Classic / Vibraphone

7. Vibraphone

8. Marimba

9. Noise Drum Kit 1

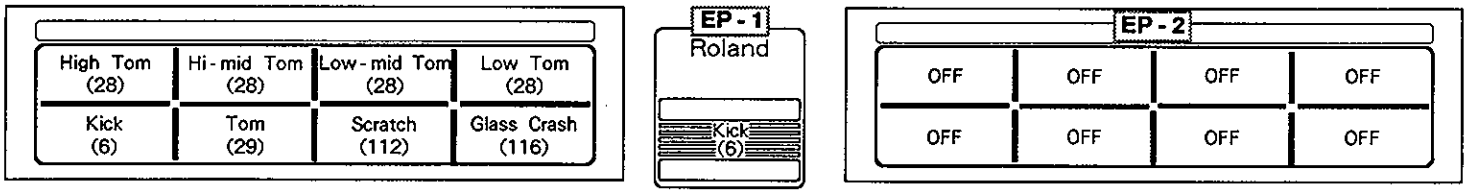
10. Dry Drum Kit 2

11. TR-808 Kit 1

12. Effect Set 1

13. Latin Set 2

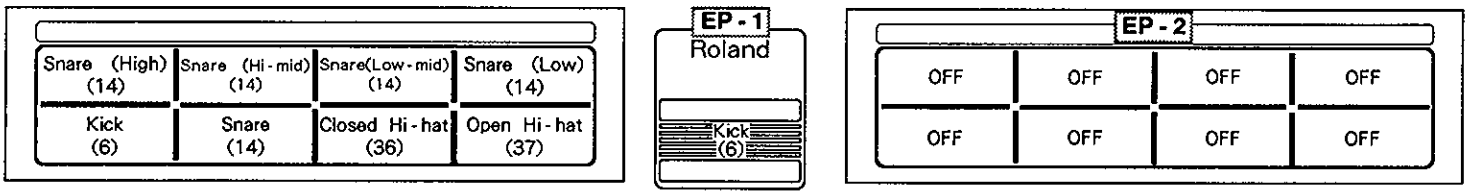
14. Electronic Drum Kit



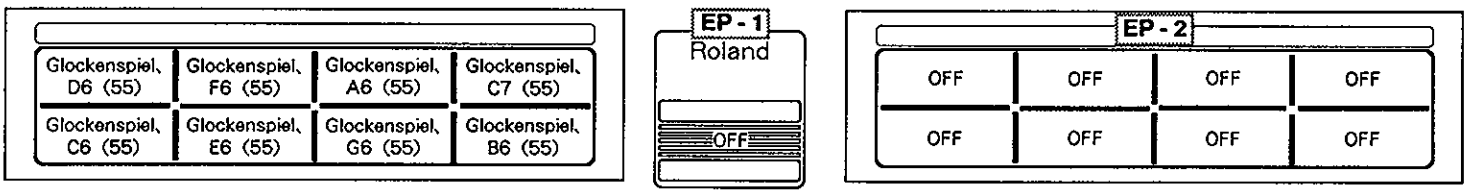
15. Steel Drum / Kalimba

16. Xylophone / Glockenspiel

17. Noise Drum Kit 2



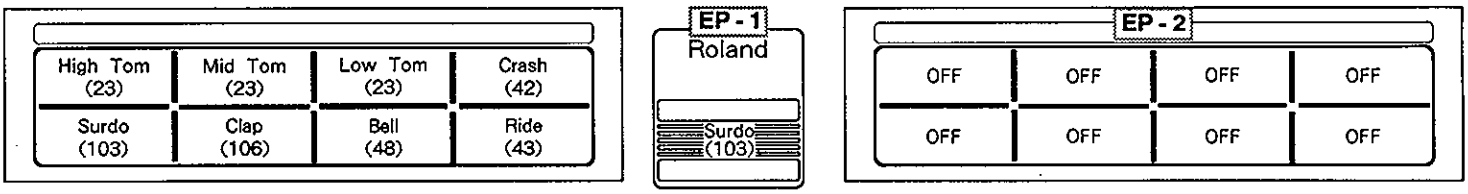
18. Glockenspiel



19. TR-808 Kit 2

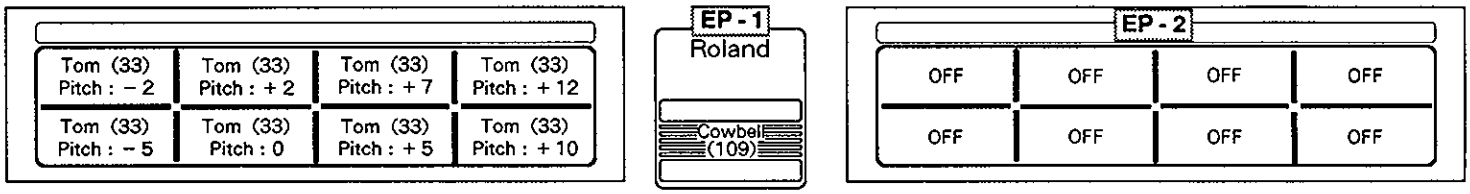
20. TR-808 Kit 3

21. Effect Set 2



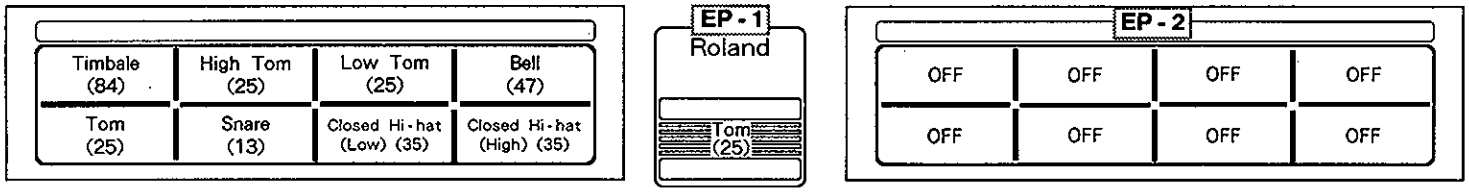
22. Samba Set

23. Ethnotoronics


Tom (33) Pitch : − 2
Tom (33) Pitch : + 2
Tom (33) Pitch : + 7
Tom (33) Pitch : + 12
Tom (33) Pitch : − 5
Tom (33) Pitch : 0
Tom (33) Pitch : + 5
Tom (33) Pitch : + 10
EP-1
Roland
Cowbell (109)
EP-2
OFF OFF OFF OFF
OFF OFF OFF OFF

24. Stereo Kalimba

25. Unbalanced 1



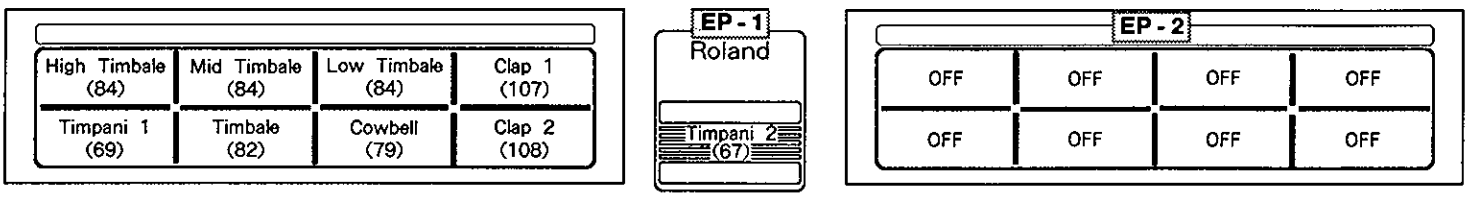
26. Agogo Harp

Agogo (87) Pitch : − 10
Agogo (87) Pitch : − 7
Agogo (87) Pitch : − 3
Agogo (87) Pitch : 0
Agogo (87) Pitch : − 12
Agogo (87) Pitch : − 8
Agogo (87) Pitch : − 5
Agogo (87) Pitch : − 1
EP-1
Roland
Shaker (96)
EP-2
OFF OFF OFF OFF
OFF OFF OFF OFF

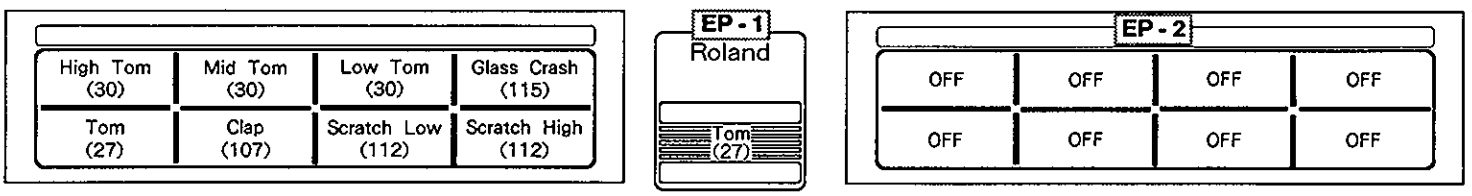
27. Standard Drum Kit 3

28. Unbalanced 2

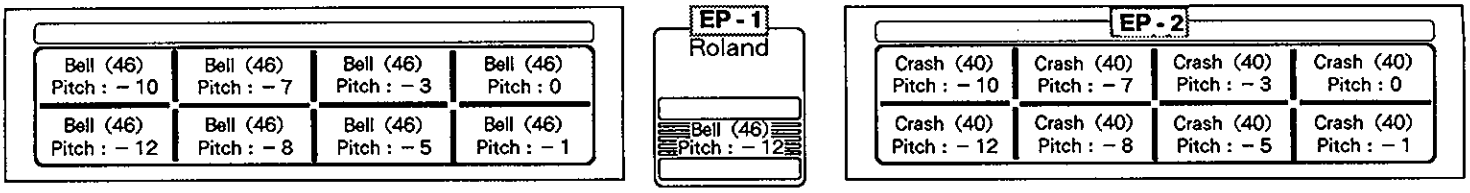
29. Can Drum



30. Rap Set



31. Gamelan / Crash Cymbal


Bell (46) Pitch : − 10
Bell (46) Pitch : − 7
Bell (46) Pitch : − 3
Bell (46) Pitch : 0
Bell (46) Pitch : − 12
Bell (46) Pitch : − 8
Bell (46) Pitch : − 5
Bell (46) Pitch : − 1
EP - 1
Roland
Bell (46) Pitch : − 12
EP - 2
Crash (40) Pitch : − 10
Crash (40) Pitch : − 7
Crash (40) Pitch : − 3
Crash (40) Pitch : 0
Crash (40) Pitch : − 12
Crash (40) Pitch : − 8
Crash (40) Pitch : − 5
Crash (40) Pitch : − 1

32. Soprano Voice

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (type IV):

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

MIDI status : F0H, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after F0H (MIDI version1.0).

Manufacturer-ID : 41H

The Manufacturer-ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer-ID.

Device-ID : DEV

The Device-ID contains a unique value that identifies the individual device in the multiple implementation of MIDI instruments. It is usually set to 00H – 0FH, a value smaller by one than that of a basic channel, but value 00H – 1FH may be used for a device with multiple basic channels.

Model-ID : MDL

The Model-ID contains a value that uniquely identifies one model from another. Different models, however, may share an identical Model-ID if they handle similar data.

The Model-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model-IDs, each representing a unique model:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Command-ID : CMD

The Command-ID indicates the function of an exclusive message. The Command-ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command-IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

Main data : BODY

This field contains a message to be exchanged across an interface. The exact data size and contents will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

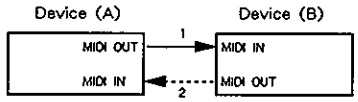
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records-waveform and tone data, switch status, and parameters, for example-to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

One-way transfer procedure (See Section 3 for details.)

This procedure is suited for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

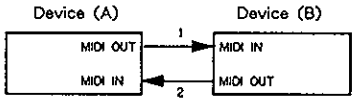


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

Handshake-transfer procedure (See Section 4 for details.)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above two procedures

*There are separate Command-IDs for different transfer procedures.
*Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device-ID and Model ID, and are ready for communication.

3. One way Transfer Procedure

This procedure sends out data all the way until it stops and is used when the messages are so short that answerbacks need not be checked.
For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

Request data # 1 : RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device will send out nothing.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

#Data set 1 : DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

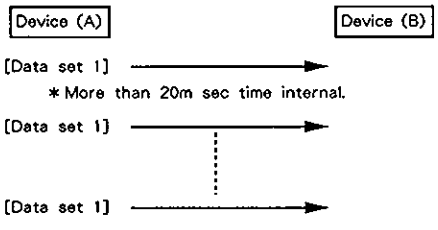
The MIDI standards inhibit non-real time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
	LSB
ddH	Data
sum	Check sum
F7H	End of exclusive

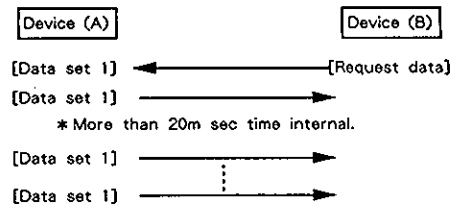
*A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one Model-ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

#Example of Message Transactions

●Device A sending data to Device B
Transfer of a DT1 message is all that takes place.



●Device B requesting data from Device A
Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



4. Handshake-Transfer Procedure

Handshaking is an interactive process where two devices exchange error checking signals before a message transaction takes place, thereby increasing data reliability. Unlike one-way transfer that inserts a pause between message transactions, handshake transfer allows much speedier transactions because data transfer starts once the receiving device returns a ready signal.

When it comes to handling large amounts of data-sampler waveforms and synthesizer tones over the entire range, for example-across a MIDI interface, handshaking transfer is more efficient than one-way transfer.

Types of Messages

Message	Command ID
Want to send data	WSD (40H)
Request data	RQD (41H)
Data set	DAT (42H)
Acknowledge	ACK (43H)
End of data	EOD (45H)
Communication error	ERR (4EH)
Rejection	RJC (4FH)

#Want to send data : WSD (40H)

This message is sent out when data must be sent to a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of the data to be sent.

On receiving a WSD message, the remote device checks its memory for the specified data address and size which will satisfy the request. If it finds them and is ready for communication, the device will return an "Acknowledge (ACK)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
40H	Command ID
aaH	Address MSB
	LSB
ssH	Size MSB
	LSB
sum	Check sum
F7H	End of exclusive

Otherwise, it will return a "Rejection (RJC)" message.
*The size of the data to be sent does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the data should reside.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Request data : RQD (41H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ssH	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

*The size of the requested data does not indicate the number of bytes that make up a "Data set (DAT)" message, but represents the address fields where the requested data resides.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The same number of bytes comprises address and size data, which, however, vary with the Model-ID.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

Although the MIDI standards inhibit non-real time messages from interrupting an exclusive one, some devices support a "soft-through" mechanism for such interrupts. To maintain compatibility with such devices, Roland has limited the DAT to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
aaH	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

*A DAT message is capable of providing only the valid data among those specified by an RQD or WSD message.
*Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
*The number of bytes comprising address data varies from one model ID to another.
*The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, size, and that checksum are summed.

Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

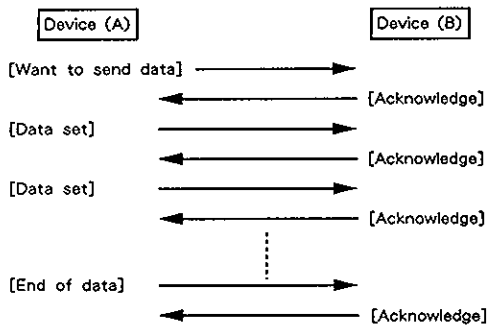
- a WSD or RQD message has specified an illegal data address or size.
- the device is not ready for communication.
- an illegal number of addresses or data has been detected.
- data transfer has been terminated by an operator.
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

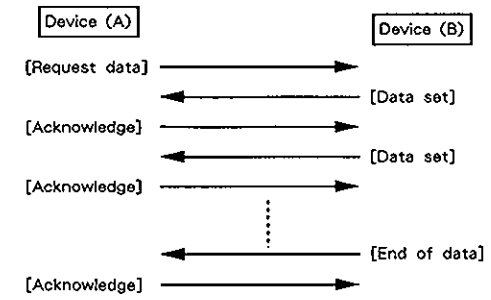
Byte	Description
F0H	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

#Example of Message Transactions

●Data transfer from device (A) to device (B).

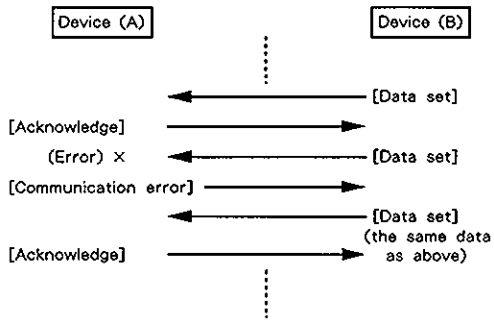


●Device (A) requests and receives data from device (B).

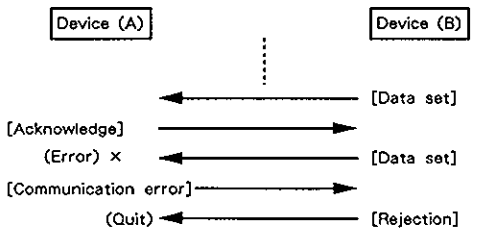


●Error occurs while device (A) is receiving data from device (B).

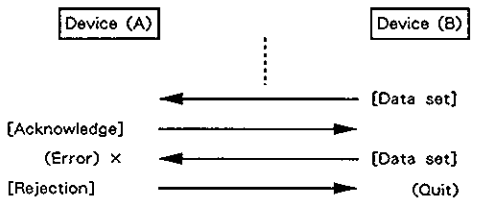
1) Data transfer from device (A) to device (B).



2) Device (B) rejects the data re-transmitted, and quits data transfer.



3) Device (A) immediately quits data transfer.



MIDI PAD CONTROLLER

Model SPD-8

MIDI Implementation

Date : Jan. 18 1990

Version : 1.00

1. TRANSMITTED DATA

■ Channel Voice Message

● Note off

Status	Second	Third
9nH	kkH	00H

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
kk = Note number	: 00H - 7FH (0 - 127)	

● Note on

Status	Second	Third
9nH	kkH	vvH

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
kk = Note number	: 00H - 7FH (0 - 127)	
vv = Velocity	: 01H - 7FH (1 - 127)	

Note number (0 - 127) and MIDI channel (1 - 16 or OFF) can be set for each of the 8 pads and the 'EP-1' pedal. Each selection can be stored in a Patch.
The Note messages are transmitted when a pad is hit or the 'EP-1' pedal (set 'TRG pedal') is depressed. No Note message is transmitted when the MIDI channel is 'OFF'.
The velocity transmitted by depressing the 'EP-1' pedal can be selected from one of 16 settings.
Gate time refers to the period between a Note on and the subsequent Note off message. If, however, another note is turned on by the same pad (or the 'EP-1' pedal) before the Note off message for the previous note is sent, a Note off message for the previous note will be sent before the new Note on message. When the gate time of the 'EP-1' pedal is set to 'OFF', the Note off message of the pedal is not programable ; it is transmitted after the pedal is released.

● Control change

○ Hold 1

Status	Second	Third
BnH	40H	vvH

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
vv = Control value	: 0H , 7FH (0 , 127)	0 = OFF 127 = ON

The Hold messages are transmitted when the 'EP-1' pedal (set 'HOLD pedal') is depressed.

● Program change

Status	Second
CnH	ppH

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
pp = Program number	: 00H - 7FH (0 - 127)	

Program numbers can be set for each of the 8 pads. A Program change is transmitted (via the MIDI channel set for each pad) whenever a patch is selected (if program change is set in a patch). The sequence of transmitted program changes is Pad NO. 8, NO.7, ····, NO.1 .
Patch display indicates the Program number + 1.

■ System Real Time message

● Active Sensing

Status
FEH

Transmitted to check MIDI connection between the SPD-8 and any external equipment.

■ System Exclusive message

Status	
F0H	: System Exclusive
F7H	: EOX (End of Exclusive)

The SPD-8 can receive System Exclusive messages in the Edit mode. The patch data of the SPD-8 can be transmitted or received by System Exclusive messages. The details are explained in section 3 ; Exclusive Communications and "Roland Exclusive Messages".

2. RECOGNIZED RECEIVE DATA

■ Channel Voice Message

● Note on

Status	Second	Third
9nH	kkH	vvH

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
kk = Note number	: 00H - 7FH (0 - 127)	
vv = Velocity	: 01H - 7FH (1 - 127)	

The SPD-8 receives Note on messages on the basic channel. If the received Note number is assigned to any pad, the instrument which is assigned to that pad will sound. If there are two (or more) pads which are assigned the same Note number, the instrument priority is given to the lower (lowest) pad number.

● Control change

○ Hold 1

Status	Second	Third
BnH	40H	vvH

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
vv = Control value	: 0H - 7FH (0 - 127)	0 - 63 = OFF 64 - 127 = ON

The SPD-8 can receive Hold 1 messages on the basic channel.

● Program change

Status	Second
CnH	ppH

n = MIDI Channel	: 0H - FH (1 - 16)	0 = ch.1 - 15 = ch.16
pp = Program number	: 00H - 1FH (0 - 31)	0 = Patch1 31 = Patch32

The SPD-8 receives Program changes on the basic channel and changes a Patch number according to the Program number.

■ System Exclusive message

Status	
F0H	: System Exclusive
F7H	: EOX (End of Exclusive)

The SPD-8 can receive System Exclusive messages in the Edit mode. The patch data of the SPD-8 can be transmitted or received by System Exclusive messages. The details are explained in section 3 ; Exclusive Communications and "Roland Exclusive Messages".

■ System Real Time message

● Active Sensing

Status
FEH

Whenever the SPD-8 receives this message, it checks the interval of the incoming data. If subsequent messages has not arrived 300ms after the previous data, the SPD-8 interrupts its playback internal instruments. Monitoring of incoming signals is terminated.

3. EXCLUSIVE COMMUNICATIONS

The patch data of the SPD-8 can be transmitted or received by System Exclusive messages. In System Exclusive messages, the model ID is expressed by 3BH and device ID by the basic channel number. In the actual data, the value of the device ID is smaller than the basic channel number by 1. If the device ID is not same as the basic channel, the System Exclusive message is ignored.

■ ONE-WAY COMMUNICATIONS

● Data set DT1 12H

byte	Description	
F0H	Exclusive status	
41H	Manufacturer ID	(Roland)
DEV	Device ID	
3BH	Model ID	(SPD-8)
12H	Command ID	(DT1)
aaH	Address MSB	
bbH	Address LSB	
ddH	Data	
:	:	
eeH	Data	
sum	Check sum	
F7H	EOX	(End of exclusive)

If the designated address (aaH, bbH) is not on the list of the address map, the System Exclusive message is ignored.

■ Address map

address		Description
aaH	bbH	
00	00	Patch 1
02	00	
04	00	Patch 2
06	00	
:		:
7C	00	Patch 32
7E	00	

MIDI PAD CONTROLLER

Model SPD-8

MIDI Implementation Chart

Date : Jan. 18. 1990

Version : 1.00

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1 – 16 , off *1	1 – 16	Memorized (Non – volatile)
	Changed	1 – 16 , off *1	1 – 16	
Mode	Default	Mode 3	Mode 3	
	Messages	×	×	
	Altered	*********		
Note Number	True Voice	0 – 127 *2	0 – 127 *2	Assignable to each pad and pedal
		*********		
Velocity	Note ON	○ 9n v = 1 – 127	○ 9b v = 1 – 127	n = Pad ch. b = Basic ch.
	Note OFF	× 9n v = 0	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change	64	*3	○	Hold 1
Prog Change	True #	○ 0 – 127	○ 0 – 31	
		*********		
System Exclusive		○	○	
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Messages	Local ON/OFF	×	×	
	All Notes OFF	×	×	
	Active Sense	○	○	
	Reset	×	×	

Notes

*1 Can be set and stored for each pad and the pedal.
*2 Common to "Transmitted" and "Recognized".
*3 Transmitted when 'EP-1' is set to 'Hold pedal'.

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

■How to read a MIDI Implementation Chart

○ : MIDI message that can be transmitted or received.
× : MIDI message that cannot be transmitted or received.

●Basic Channel

Range of MIDI channels which can be assigned for use in transmitting (receiving) MIDI message. Settings for MIDI channel are retained in memory even while power is off.

●Mode

The majority of contemporary keyboards use Mode 3 (OMNI Off, Poly).
Reception : MIDI message is received only on the specified channels, and played polyphonically.
Transmission : All MIDI message is transmitted on the specified MIDI channels.

* "Mode" refers to MIDI Mode messages.

●Note Number

This is the range of Note numbers that can be transmitted (or received). Note number 60 is middle C (C4).

●Velocity

This is the range available for transmission (reception) of Velocity along with Note On and Note Off messages.

●Aftertouch

Not implemented on the SPD- 8.

●Pitch Bender

Not implemented on the SPD- 8.

●Control Change

This indicates the Control Numbers that can be transmitted/received, and what they will control. For details, refer to the MIDI Implementation.

●Program Change

The Program Numbers in the chart are the actual numeric data. The numbers are thus smaller by 1 than each Pad's Program numbers.

●Exclusive

Patch data can be transmitted/received using Exclusive messages.

●Common, Real Time

These comprise MIDI message used for synchronizing play with a sequencer or rhythm machine. Not implemented on the SPD- 8.

●Aux. Messages

These messages are mainly of the type used for diagnosis, such as Active Sensing (checks whether MIDI cable is in proper condition or not) ; and All Notes Off (message which terminates sounding of all notes).

Specifications

SPD - 8:Total Percussion Pad

● Number of Pads
Integrated Pads: 8

● Memory Capacity
Patches: 32
Patch Chains: 1

● Sound Source
Internal Sound Source: 39 sounds
Dynamic Range: 16 bit
Maximum Polyphony 9 (Most recent given priority)

● Pad Parameters
(Sound Parameters)
Instrument Assign: OFF/1 – 117
Pitch: ± 1 octave (100 cent units)
Decay: – 30 to +30
Velocity Filter: 1 – 10
Pan: L1 – L6/Ctr/R1 – R6
Velocity Curve: 1 – 5
Individual Pad Level : 1 – 20
(MIDI Parameters)
MIDI Channel: OFF/1 – 16
Note Number: 0 – 127
Gate Time: 0.1 – 4.0 sec.
Velocity Curve: 1 – 6
Velocity Sensitivity: 1 – 16
Program Change: OFF/1 – 128

● Display
Patch Display (7 - segment LED x 3)

● Indicators
Pad Indicators (LED x 8)
Parameter Indicators (LED x 8)

● Control Section
(Front Panel)
VOLUME Button
COPY Button
SOUND Button
MIDI Button
ALL/ENTER Button
EDIT Button
PATCH CHAIN Button
VALUE Button
PATCH/LEVEL Button
(Rear Panel)
Power Switch

● Output Jacks
Stereo Out Jacks (L (MONO)/R)
Headphone Jack (Stereo Mini Jack)

● Input Jacks
Stereo In Jack (Stereo Mini Jack)

● Connectors
MIDI Connectors (IN/OUT)
External Pedal Jack 1
External Pedal Jack 2
Patch Shift Jack
AC adaptor Jack

● Dimensions
450 (W) x 350 (D) x 70 (H) mm.
17 - 23/32 (W) x 13 - 25/32 (D) x 2 - 3/4 (H) inches

● Weight
2.5 kg.
5 - 1/2 lbs.

● Rated Power Supply: DC 9V

● Power Consumption: 220 mA

● Supplied Accessories
Supplied AC adaptor
Owner's Manual

● Options
DP - 2 (Pedal Switch)
FS - 5U (Foot Switch)
APC - 33 (All - purpose Clamp Set)

* Specifications for, and/or external appearance of this product are subject to change without notice.

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Roland